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Developing a new data and information ecosystem that supports the reformed school system in Wales – findings from a research study

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Views expressed in this report are those of the researcher and not necessarily those of the Welsh Government

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1. Glossary

Acronym/Key word	Definition
ALN	Additional learning needs – the term used to refer to the needs of learners that require additional support to participate fully in education, for instance learning, physical, or sensory needs.
AoLE	Areas of Learning and Experience – six areas into which the Curriculum for Wales is divided (Expressive Arts; Health and Well-being; Humanities; Languages, Literacy and Communication; Mathematics and Numeracy; Science and Technology). Within each AoLE, mandatory statements of what matters serve as guides for schools in developing their own curricula.
AWCDS	All Wales Core Data Set – a suite of analytical reports created annually by the Welsh Government and sent to schools. They include a range of contextual and learning indicators. Many of the AWCDS reports were suspended from academic year 2019/20 due to the impact of the coronavirus pandemic.
CfW	Curriculum for Wales – the curriculum introduced into all publicly funded nursery and primary settings in September 2022, and which will become statutory for learners in Year 8 from September 2023.
eFSM	Eligibility for Free School Meals – an identifier of disadvantage, based on a learner’s household income. Percentage of learners eligible for free school meals is often used as an indicator of the proportion of learners within a population who are disadvantaged.
EOTAS	Education other than at school – education provision designed to meet the specific needs of learners who, for whatever reason, cannot attend a mainstream or special school. EOTAS includes provision for learners excluded from mainstream settings.
KS4	Key Stage 4 – the two years of education (Years 10 and 11) during which most learners work towards national qualifications such as GCSEs. At the time of writing, Key Stages 4 qualifications are still in place, though will be replaced by a new assessment framework from academic year 2026/27.
Middle tier organisations	Public authorities other than the Welsh Government that operate at a regional or national level in the school system, including Estyn, local authorities, and regional consortia. Other organisations such as Diocesan authorities are also included in the middle tier of organisations, although in this report we use middle tier organisations to the former three organisations only unless specified otherwise. And in this report we refer to the school improvement partnership arrangements between local authorities as regional consortia, which are in place in most regions. Where local authorities have chosen to deliver all school improvement activities themselves, the references should be interpreted to apply to them equally.
NEET	Not in education, employment or training – a key indicator of the labour market and destinations for young people aged 16 and over.

NR:EI	The national resource: evaluation and improvement – a resource to support schools with self-evaluation and improvement, part of the Welsh Government’s School improvement guidance .
PLASC	Pupil level annual school census – a statutory return of learner and school-level data provided by all maintained sector primary, middle, secondary, nursery, and special schools to the Welsh Government in January each year.
Post-16	This refers to education settings beyond secondary school age, and includes both further education settings like colleges and vocational and work-based learning like apprenticeships.
SHRN	The School Health Research Network – a research partnership, led by Cardiff University and including the Welsh Government, Public Health Wales (PHW), Cancer Research UK, and the Wales Institute of Social and Economic Research, Data and Methods. It creates and administers several school research tools including a wellbeing survey.
Standardised data	Any data that is collected and/or reported on in a consistent and standardised way across multiple organisations (e.g., several or all schools, all local authorities).
SWAC	School Workforce Annual Census – an annual data return completed by maintained settings, with data items at both a staff member and school level. Results inform Welsh Government policy on issues relating to pay and conditions, and recruitment and retention.
WIMD	Welsh Indicator of Multiple Deprivation – the Welsh Government’s official measure of relative deprivation for small areas in Wales. It identifies areas with the highest concentrations of several different types of deprivation and ranks them from 1 (most deprived) to 1,909 (least deprived).

2. Introduction

Background and context

- 2.1 The school system in Wales is undergoing significant reform. The [Education in Wales: Our National Mission](#) sets out a bold vision for transforming the curriculum and improving the skills and knowledge of children and young people. This builds on the response to the 2015 [Successful Futures](#) report, an independent review of curriculum and assessment arrangements in Wales, and ongoing work to deliver related national policy priorities such as [Cymraeg 2050: A million Welsh speakers](#) and the [Wellbeing of Future Generations Act](#).
- 2.2 The Curriculum for Wales (CfW), a cornerstone of the reforms, has since been developed with schools, teachers, and experts. Its goal is to provide learners with the knowledge, skills and experiences they need for employment, lifelong learning and active citizenship in the fast-changing world. Schools and other educational settings have begun to teach the CfW to all learners up to Year 6. Nearly half of secondary schools have also taken up the option to teach it to Year 7 learners from academic year 2022/23 ahead of it becoming statutory for Year 7 and 8 learners in all schools from September 2023.¹ The first qualifications under the new curriculum will be awarded in 2027.
- 2.3 The [Education in Wales: Our National Mission, updated in October 2020](#), set out a plan of action for continuing implementation of the CfW. It is underpinned by four enabling objectives that are central to realising the new vision for the school system and its learners. The fourth of these enabling objectives is creating ‘robust assessment, evaluation, and accountability arrangements’ that are aligned to the principles of the CfW and can support a self-improving system.
- 2.4 This study was commissioned to advance this fourth objective. It is part of a broader programme of evidence and research. For example, the [School improvement guidance: framework for evaluation, improvement and accountability](#), was launched in the summer of 2022, along with a corresponding package of [resources to support schools in undertaking robust, evidence-based, self-evaluation](#) (NR:EI). A separate [Scoping study for the evaluation of the curriculum and assessment reforms in Wales](#), commissioned by the Welsh Government, was also recently completed,

¹ [Written Statement: Secondary school roll out of the Curriculum for Wales from September 2022](#)

which explored and made recommendations for how to monitor and evaluate the implementation of the reforms and their impacts over the next 10 years.

- 2.5 The Welsh Government will consider the findings of the evaluation scoping study together with related research and policy development strands in the autumn and winter of 2022, with a view to publishing a detailed evaluation plan in the summer of 2023.

About the research study

- 2.6 The Welsh Government's vision is for a data and information 'ecosystem' that is fully aligned with the principles of the CfW and supports all partners to implement it successfully. This ecosystem encompasses three key functions:
- self-evaluation and improvement
 - accountability
 - transparency for wider citizens.²
- 2.7 These functions exist across all three tiers of the school system: schools and other settings, for example, are responsible for the self-evaluation and improvement of their curricula and services; at the middle tier, Estyn are responsible for school accountability, and local authorities and regional consortia support schools with their own self-evaluation and improvement; and at a national level, the Welsh Government drives self-evaluation and improvement of policy and transparency for parents and carers, communities and wider stakeholders. These organisations and other agencies have a range of different needs for using data and information to support each function.³
- 2.8 A number of factors prompted the commissioning of this research study. Firstly, there has historically been a disproportionate focus on learner attainment in summative assessments (i.e. Key Stage 4 qualifications outcomes) within the data and information ecosystem for all three functions. This has resulted in unintended consequences where the benefit of individual learners has not been placed at the heart of decision-making. For instance, the Welsh Government were aware of perceptions amongst system stakeholders that: some schools have opted to offer

² We subsequently refer to these key functions as self-evaluation, accountability, and transparency.

³ In this report we refer to the school improvement partnership arrangements between local authorities as regional consortia, which are in place in most regions. Where local authorities have chosen to deliver all school improvement activities themselves, the references should be interpreted to apply to them equally.

qualifications because they are ‘worth’ more in school performance measures, regardless of their suitability for individual learners; others have removed learners from classes too early as their qualifications results were likely to have a negative impact on the schools’ headline performance figures; and that data has been used out of context within the middle tier and at a national level, resulting in schools feeling unfairly scrutinised (e.g. league tables and rankings based on KS4 qualifications outcomes) and misallocation of resources for support and improvement planning.

- 2.9 The CfW is also much more flexible – schools design their own curricula – and more broad. The [four purposes](#) set out an expanded vision for education in Wales, and prioritise supporting learners to become: enterprising, creative contributors, ethical, informed citizens, and healthy, confident individuals, alongside high ambitions and standards for learning and attainment. The former data and information ecosystem, narrowly focused on Key Stage 4 qualifications and other assessment results, does not support this vision.
- 2.10 In the autumn of 2021, the Welsh Government therefore commissioned Social Finance (SF) to conduct this research study to support the development a new data and information ecosystem that reflects the content and ethos of CfW.

Objectives and key research questions

- 2.11 The aim of this research study is to define a new school data and information ecosystem for Wales that can support the three core functions of stakeholders within the school system:
- self-evaluation and improvement of services, support, or policies across all tiers
 - accountability and effective oversight at all tiers
 - transparency across the system, demonstrating performance and progress to parents and carers, communities and wider stakeholders.
- 2.12 ‘Ecosystem’ here is defined in the broadest possible terms, encompassing the full range of information collected and used by partners at all tiers. Indeed, in the recently published [School improvement guidance](#), these partners are encouraged to draw on a much broader range of data and information than used previously to carry out their respective core functions. In understanding and defining the current ecosystem and making recommendations for future changes and improvements, the study therefore seeks to consider, among other factors: both qualitative and

quantitative data; existing and possible new data; data ‘journeys’ (how data is collected, processed, and used by different partners to inform decision-making); indicators and reporting; and security and ethics. The Methodology section outlines how we set out to understand and define these various aspects of the ecosystem.

2.13 Several other elements were identified as important in defining the new ecosystem:

- alignment with the CfW: the new ecosystem must reflect the breadth of the curriculum, helping to create a more holistic understanding of attainment, and putting it in a par with things like wellbeing
- trust and buy-in: the new ecosystem must have the trust and support of stakeholders at all levels, especially schools, local authorities, and regional consortia, and so should be developed closely with them
- self-evaluation and improvement: the ecosystem must also help achieve the goals of recent School improvement guidance, which states that the majority of the energy and focus in the system should be on delivering school improvement, though backed up by strong accountability and transparency mechanisms
- built for the future: as well as recommending changes in the near term, more general principles and approaches should be developed that will enable the Welsh Government and its partners to continue to evolve the ecosystem as schools' understanding and experience of the CfW develops
- learn from other approaches: several other countries are on or have been on a similar journey to Wales in reforming their education systems. Considering up-to-date practice from these countries and other parts of the UK that support well-functioning, progressive education systems is therefore essential.

2.14 The study set out with a number of research questions relating to the specific needs of stakeholders in the system for using data and information (below). The intention was then to use the information gathered from answering these questions as the starting point for uncovering both broader insights into the nature and definition of the data and information ecosystem in Wales and general principles to underpin its evolution in future (discussed in more detail in the Methodology section).

1. what data and information is most useful to meet the three key functions?
2. what data and information is already collected, analysed and available to different tiers of the system? How useful is it and for whom?

3. what existing data and information is not relevant or useful for these purposes? Where are the priority gaps?
4. how can stakeholders make best use of existing data and information?
5. what are the options to address priority data and information gaps?
6. what are the benefits, costs and risks of these options?

Scope

- 2.15 The qualifications used within the school system were not in scope. Qualifications Wales, the independent qualifications regulator, is actively reviewing the future qualifications and assessment arrangements under the CfW ready for the first learners to sit them in 2026/27. However, qualifications outcomes data – from the raw results of summative assessments at KS4 to summary indicators of school-level and national attainment – is of course one of the most important parts of any school data and information ecosystem, regardless of what the qualifications are. It was therefore determined that performance indicators, of the kind used to summarise qualifications outcomes data, were within the scope of this project. Post-16 arrangements were not in scope.
- 2.16 This report also does not cover every aspect of the use of data and information in the school system. The value of data linking research is recognised in the [scoping study for the evaluation of the curriculum and assessment reforms](#), but is not covered in this report specifically. The information that schools and other stakeholders use on a day-to-day basis for operational purposes, for instance recording the incremental progress of individual learners, was out of scope. While this information is certainly a key part of the data and information ecosystem, this report was primarily concerned with instances where the data and information needs of multiple schools come together, for instance when data is collected and/or reported in a consistent and standardised way across multiple organisations and stakeholder groups. This distinction is discussed in more detail in Findings section 4.
- 2.17 Similarly, not every school policy area is covered. Our needs-led approach (described in the Methodology) meant that both our findings and recommendations respond to those stakeholder needs that emerged as priorities at the time of research and writing. This is not to say that other policy areas and uses of data and information that do not figure prominently in the report are not relevant or sit outside

the data and information ecosystem. Indeed, the data and ecosystem will always be evolving as the CfW becomes more established and the school system works towards the vision set out in the School improvement guidance, so these areas could well be reviewed and/or revised in future. This is discussed further in the Recommendations section.

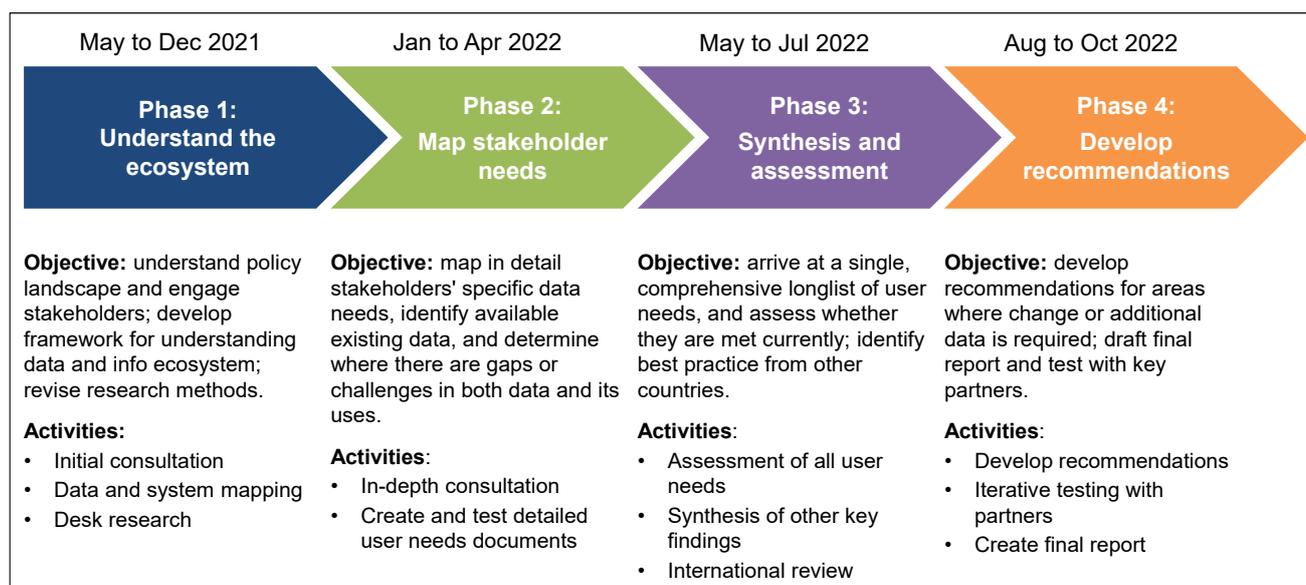
2.18 Finally, most of the research for this study was conducted during academic year 2021/22, which was a time of significant upheaval in the school system as schools and other partners recovered from the coronavirus (COVID-19) pandemic. Some of the pre-coronavirus approaches to using data and information (e.g. Key Stage 4 performance measures) had been paused during this period. This study therefore considered both the approaches in place at the time of the research and writing as well as those pre-coronavirus. This distinction is made throughout the report where relevant.

3. Methodology

Overview of methodology

- 3.1 Social Finance began this research project in May 2021. Our approach was to work closely with stakeholders across the school system in Wales throughout the project to co-create solutions that met their needs. There were four phases to the research:
1. **Phase 1: Understand the ecosystem** – we started with a broad scoping phase to understand the policy landscape, the roles and responsibilities of different stakeholders, and the current state of the data and information ecosystem; and how these might change and evolve as the CfW is rolled out. This involved initial stakeholder engagement, system mapping and data mapping, and desk research. We created conceptual frameworks for understanding different aspects of the data and information ecosystem, which informed our research methods and recommendation development process in subsequent phases.
 2. **Phase 2: Map stakeholder needs** – we conducted a second, more in-depth round of stakeholder engagement to understand the specific data needs of stakeholders, what is working well currently, and where there are perceived to be gaps in data and its uses. We created detailed user needs documents summarising findings for each stakeholder group, which were shared and tested with key stakeholders.
 3. **Phase 3: Synthesis and assessment of user needs** – we synthesised the feedback on detailed user needs documents as well as the findings from other research strands to arrive at a combined list of user needs for the data and information ecosystem. We then conducted a detailed assessment of each user need using a common template to determine whether it is being met by current data and information, or whether new or additional standardised data is required. We also conducted an international exemplar review in this phase.
 4. **Phase 4: Develop options and recommendations** – the assessment of the list of all user needs indicated areas where some change or additional standardised data is required (and where not). We put this together with relevant findings from other research strands to develop a set of recommendations on where changes are needed for the new data and information ecosystem, again using a common template to explore the detail and implications. This was an iterative process involving testing with various stakeholders.

Figure 3.1: Overview of research methodology



Approach to stakeholder research and engagement

3.2 Extensive engagement and co-construction with partners across the education system and around Wales was identified as crucial to the success of the research. We therefore applied four ethical principles to underpin our co-production and participatory research approach:

- **mutually beneficial** – we value the expertise of professionals, learners, families and other stakeholders, and will compensate them fairly for their contributions. Where appropriate, this will include financial / voucher compensation. For professionals, compensation may be less tangible, in that their insights will help develop a system which better serves their needs
- **continued engagement** – people may be keen to be involved throughout the process, to ensure their expertise informs change. All stakeholders who engage with us will be invited to feed into the project throughout its duration and we will provide direct contact details for the researchers to enable this
- **non-extractive** – we will ensure that any sensitive issues are treated with care. While conversations around data are likely to uncover sensitive topics, some interviewees may reflect on their own personal experiences with respect to what data is important (particularly around wellbeing). We will be conscious of this and never probe any further than appropriate
- **safeguarding and consent** – all researchers must be DBS checked and interviews with young people or vulnerable adults will never be carried out as

one-to-ones. As part of securing informed consent, we will explain to stakeholders how they can report concerns. Findings will be anonymised and all use/storage of data gathered in the project will be in accordance with GDPR

3.3 We used a range of user research methods tailored to different audiences and provided everyone with the opportunity to engage with us in Welsh (both in writing and in-person sessions). Research methods included:

- **interviews:** the majority of research was through semi-structured interviews (approximately 60 minutes), with topic guides and open-ended questions. We allowed for discussion and exploration of key issues
- **focus groups:** we used focus groups, typically of four to six people (either within the same organisation or across organisations), to build a shared understanding, explore issues from multiple perspectives, and develop and test new ideas
- **surveys:** to maximise breadth and accessibility of engagement, we distributed a survey to parents and carers and schools
- **webinars:** we hosted webinars to invite feedback on our recommendations from the wider school community.

3.4 To try to engage with as representative a sample of schools as possible, we developed a sampling criterion (including sector, governance, Welsh / English medium, percentage of pupils eligible for FSM, religious character, and location), which was used when designing all school engagement strands.

3.5 It should be noted that our research took place during the academic year 2021/22, during which many of the arrangements for using data and information used before coronavirus had been suspended. Our research therefore covered both stakeholders' reflections on approaches prior to coronavirus and on data that is available now.

Iterative approach and partnership working with the Welsh Government

3.6 The approach to the research was iterative and adaptive. At the outset of the project, whilst we and the Welsh Government had a sound heuristic understanding of the shape, context, and content of the data and information ecosystem, it had not previously been defined formally. As such, it was necessary to continually pause and reflect on emerging findings, assess whether our research methods were yielding the expected results, and adapt accordingly (e.g. areas for further research, format and content of outputs)

- 3.7 We worked closely with members of the Welsh Government School Information and Improvement Branch, which commissioned the research, throughout the project. This team provided access to relevant documentation and stakeholders for consultation, check and challenge, and regular feedback on emerging findings and recommendations. Our close working relationship with this team was invaluable to the success of the project.
- 3.8 A Steering Group provided project governance and oversight. Its role was to ensure research methods were of high quality in accordance with Government Social Research Standards. Membership included head teachers and members of the Welsh Government policy teams. We also met quarterly with a separate Advisory Group. This group provided additional context, knowledge, and constructive challenge, highlighted areas for further investigation, and supported stakeholder engagement. Members included representatives from the Association of Directors of Education in Wales, Estyn, regional consortia, Qualifications Wales, and the Welsh Local Government Association.

Phase 1: Understand the ecosystem

- 3.9 This initial scoping phase was used to refine our understanding of the policy landscape and the roles and responsibilities of key stakeholders. We carried out a desktop review of education legislation, policy, and internal documents to gain a base understanding of the current data and information ecosystem. Initial scoping interviews were held with stakeholders from across the system. Annex A provides a summary of the desktop and user research we carried out during this phase.
- 3.10 During this phase we also conducted data mapping and visual mapping of the data and information ecosystem. This was to identify what data is available and used currently, and to get an indication of challenges and issues in the system to explore further. For data mapping, we built on work started by Arad in their parallel scoping study for the [evaluation of the curriculum and assessment reforms in Wales](#), commissioned by the Welsh Government.
- 3.11 These activities were also important for defining key aspects of the ecosystem that underpinned subsequent phase of research (e.g. types of data, flexible versus standardised data). We defined standardised data to be any data that is collected and/or reported on in a consistent and standardised way across multiple organisations (e.g., several or all schools, all local authorities).

Phase 2: Map stakeholder needs

- 3.12 The goal of this phase was to understand and map in detail the needs of different stakeholders in the education system, and the data and information they require to meet these needs. For example, Estyn need to carry out regular school inspections according to their statutory [Inspection Framework](#), and require a range of data and information to do this effectively. We employed a needs-led approach, which is the cornerstone of good data and digital service design (e.g. one of the principles in the Centre for Digital Public Services [Digital Service Standards for Wales](#)).
- 3.13 Key research questions for this phase included:
- where do stakeholders within the school system in Wales need data to fulfil or support their respective core functions and responsibilities?
 - what data and information currently exists that meets these needs?
 - where are there gaps in the data and information available – and opportunities for new, valuable data and information?
 - where would it be beneficial for data to be standardised?
- 3.14 We answered these questions in three ways: further, more detailed stakeholder engagement; targeted desktop research to explore questions identified during engagement in more detail; and creation of detailed user needs documents for each of the key stakeholder groups, which were shared with these stakeholders for validation and feedback.
- 3.15 At this point in the project, stakeholders were divided into two categories: i) key stakeholders; and ii) other important stakeholders. Key stakeholders included:
- schools (local level)
 - Estyn, local authorities, and regional consortia (middle tier)
 - the Welsh Government (national level).
- 3.16 These key stakeholders have the principal roles in carrying out the core functions of self-evaluation, accountability, and transparency and as such make the greatest use of data and information. We engaged them more frequently and in greater detail.
- 3.17 Other stakeholders – including Diocesan authorities, employers, further and higher education settings, learners, and parents and carers – of course also have important data and information needs. These were given equal weight to those of key stakeholders when it came to developing solutions, however, they were

generally found to require data and information less frequently or for a very specific purpose, so we needed to engage with them less. Annex A outlines the user research activities for each stakeholder group.

- 3.18 In addition to face-to-face research, we surveyed parents and school communities via a survey. The survey was anonymous with the option to leave an email address if participants wanted to be part of a follow up focus group. We had 50 responses to the survey, and we held a single focus group. The objective of parent and carer engagement was to understand what information would help them to understand how both individual schools and the wider system were working.

Desktop research

- 3.19 In parallel to our user research interviews, we carried out desktop research to gain further insight. This included research into:

- **policy context:** we considered emerging recommendations from relevant policy documents – including the National Evaluation and Improvement Resource, Arad’s Curriculum for Wales evaluability report, and the [Whole School Approach to Mental Health: Evaluability Assessment](#) – and their impact on our research. We also identified areas of policy that were still in development (e.g. Year 11 qualifications arrangements) that could impact our final recommendations
- **mapping of existing data:** Building on work completed by Arad in their scoping study, we carried out a data mapping exercise. The purpose of this was to identify existing relevant datasets to inform our understanding of the ‘as-is’ of the data ecosystem and to inform our later conversations with stakeholders around the data they currently use
- **top-down mapping of data needs:** Informed by our understanding of stakeholders’ responsibilities from desktop research, we identified initial lists of potential data requirements for key stakeholders. These insights were then validated against findings from stakeholder interviews.

Creating and testing detailed user needs documents

- 3.20 The findings and outputs from the above research activities were synthesised to create longlists of user needs for each key stakeholder. Summaries of this information – detailed user needs documents – were sent to representatives of each key stakeholder for their validation and review. These documents summarised, for each key stakeholder, their priority needs, data available currently, and possible

gaps and challenges. They also presented options for changes and/or additional standardised data that could be collected to address gaps and challenges (including their respective pros and cons), and asked for feedback on these options. Feedback was received in either writing or in a follow up conversation from multiple schools, local authorities, and Welsh Government policy teams. Estyn and regional consortia provided collated feedback. See Annex B for an example of these detailed documents.

Phase 3: Synthesis and assessment of user needs

3.21 There were two parts to the third phase of research:

- assessment of user needs and hypothesis development – building on the detailed user needs documents we created a single, comprehensive longlist of user needs for the ecosystem as a whole. We assessed each of these using a common template to identify whether a change is necessary and to generate initial hypotheses for what this could look like
- international exemplar review – rapid review of education systems in countries similar to Wales to identify relevant practice in designing aspects of a data and information system.

Assessment of user needs and hypothesis development

3.22 By looking across the detailed user needs documents developed and tested in Phase 2, we recognised that several stakeholders had common needs for data and information. We therefore combined these findings into a single, comprehensive longlist of user needs for the ecosystem as a whole.

3.23 We created a template to assess each of the combined user needs. This pulled together all the relevant information collected to date for each user need (e.g. data available currently and gaps, needs of each stakeholder and tensions between them, outstanding research questions). During a series of internal workshops, we appraised this information and created hypotheses for whether some change or new data is required to meet needs. A summary of the outputs from this process for one user need (learner wellbeing) appears in Findings section 5 below. The findings from the exercise were presented to the Welsh Government and the Steering Group and Advisory Group in an interim report.

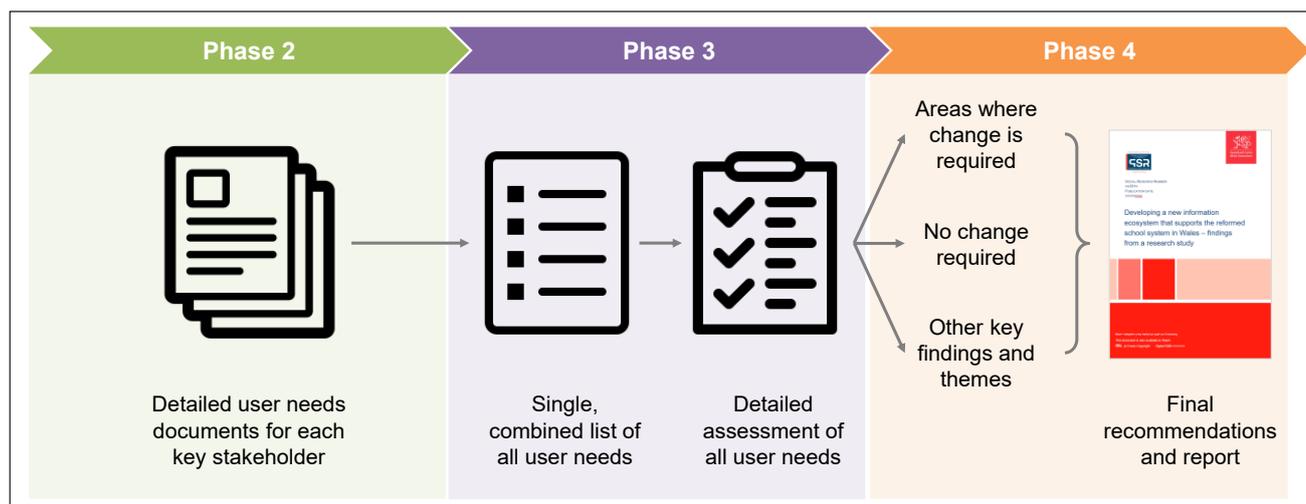
International exemplar review – learning from other countries

- 3.24 Alongside the assessment of stakeholder data and information needs, we carried out a semi-structured literature review of relevant policy and practice in education data and information systems in other countries. The purpose was to understand good practice relating to improvement, accountability and transparency, and to identify key learnings that could inform our recommendations for Wales.
- 3.25 Research was targeted to explore specific issues and questions relevant to the Welsh and our understanding of stakeholders' needs at this stage in the project. We also limited research to places that are similar to Wales to ensure findings were applicable and relevant. The countries selected were Finland, New Zealand (Aotearoa), Singapore, bilingual regions of Spain (Catalonia and the Basque Country), Scotland, and Northern Ireland. We explored the following aspects of data and information ecosystems: wellbeing, sampling, bilingual/plurilingual data capture, progression (in terms of achievement and attainment), and communication. More detail is provided in Annex C.

Phase 4: Develop options and recommendations

- 3.26 The detailed assessment of user needs identified areas where changes to how current data is used and/or where different or additional standardised data may be required. During the final phase we synthesised our combined research insights to create recommendations focused on these areas. It was anticipated that this would include recommendations for both specific changes (e.g. how to capture and use data about learner wellbeing) and more general principles and approaches to underpin the future data and ecosystem as a whole. We used a common template to develop the detail for each recommendation, covering: summary of the recommendation and rationale; how it balances different stakeholder needs; the proposed data journey (e.g. how data should be collected, processed, shared, and used); the kind of indicators, outputs, and reports to be created; level of prescription for the data items collected and any corresponding guidance that should be provided by the Welsh Government; assessment of anticipated benefits and costs, including new burdens involved; and finally discussion of any risks of implementing / not implementing the recommendation. The template used is at Annex D.
- 3.27 The overall process for developing recommendations, from Phases 2 to 4, is summarised in Figure 3.2.

Figure 3.2: Summary of process to develop recommendations



Note: this graphic presents a simplified version of the process to develop recommendations for explanatory purposes.

3.28 Finally, we undertook several rounds of testing of draft recommendations to ensure they were valuable and practical, met the needs identified, and made sense as a whole. The format and partners involved in testing appear in Annex A.

Limitations

3.29 Accessing a fully representative sample of schools to engage in research was the principal challenge. This was mostly due to competing priorities at the time of the research, namely the impact of coronavirus on teaching and staffing levels combined with preparations for the introduction of the CfW. While a large number of schools were initially contacted via email (e.g. for focus groups and interviews), it was subsequently decided that undue pressure should not be placed on schools to engage, and as such, we did not follow up with most schools more than once if they were not responsive. We therefore pivoted our approach towards deeper engagement with a small number of schools that were responsive and engaged in the process, rather than broader, light-touch engagement with a wider sample. This meant we gained more in-depth insights at an earlier stage in the research process. We generally reached a 'saturation point' after speaking to three to four schools about the same topic, after which significant new insights were limited.

3.30 To broaden the range of school feedback and give all schools the opportunity to provide their input, in Phase 4 we held two webinars open to all schools in Wales at which we shared and tested our draft recommendations. Attendees were also invited to complete a follow-up survey.

4. Findings – Defining key parts of the data and information ecosystem

4.1 The objectives of the first phase of research were to better understand the policy landscape; engage stakeholders and better understand their core functions and roles with regard to self-evaluation, accountability, and transparency; and develop definitions and insights to help understand the current data and information ecosystem that would drive subsequent research activities.

Initial stakeholder engagement – functions and roles

4.2 During initial engagement we mapped the main functions and roles and responsibilities of key stakeholders and gained a high-level overview of their primary needs and challenges within the current data and information ecosystem. These are summarised in Table 4.1 below.

Table 4.1: Core functions and data needs for key stakeholders

Stakeholder	Core functions	High level needs
Estyn	<p>Self-evaluation: No legislative responsibilities</p> <p>Accountability: Legislative responsibilities to inspect schools, local authorities, and regional consortia</p> <p>Transparency: Legislative responsibility to report on results of inspections</p>	<ul style="list-style-type: none"> • Estyn needs a range of data and information to carry out school inspections, under its new Inspection guidance. • The primary source of information on which Inspectors base evaluations is always what they see when visiting the school. • Standardised data is valuable to triangulate against findings from inspection activities • Estyn only includes standardised school-level data in its reports that has been collected / validated / published by the Welsh Government. Inspectors will consider additional data provided to them by schools themselves as well as data from questionnaires for pupils, parents, staff, and governors, but will not include it in a report
Local authorities and regional consortia	<p>Self-evaluation: Legislative responsibility to carry out self-evaluation of their own services and support to schools</p> <p>Accountability: Legislative responsibility for quality of school operations</p>	<ul style="list-style-type: none"> • These stakeholders felt there was value in being able to compare schools within their region using standardised data to identify issues and direct their resources. • A key part of the role of local authorities and regional consortia is to support school-to-school collaboration. It was felt that current data and practices may instead create an element of competition between schools. • These stakeholders also highlighted that some schools perceived that standardised

	<p>and 'performance' and to support schools in their own self-evaluation and improvement</p> <p>Transparency: Legislative responsibility to report on the services they provide to schools</p>	<p>data in the system is being used by middle tier organisations more for scrutiny and accountability purposes than to support with self-evaluation and improvement. As such, schools are sometimes reluctant to present or share data with them.</p>
Schools	<p>Self-evaluation: Legislative responsibility to carry out self-evaluation across all elements of learning and school environment</p> <p>Accountability: School Governors have an accountability role</p> <p>Transparency: Legislative responsibilities to publish annual reports, school prospectuses, and school development plans</p>	<ul style="list-style-type: none"> • Schools welcomed new School improvement guidance that emphasises using a range of data, information, and evidence for self-evaluation, that is, flexible and qualitative sources as well as reports and indicators from standardised datasets • However, several areas were identified where new standardised information would be useful for self-evaluation. These often aligned to new aspects of the curriculum (e.g. wellbeing, learner skills). • The historic approach to using data and information was viewed negatively by many schools. For example, they did not derive much value from the data they were required to collect, and outputs were often used as a scrutiny or accountability tool by middle tier organisations rather than to support self-evaluation and improvement.
Welsh Government	<p>Self-evaluation: Legislative responsibility to carry out self-evaluation for implementation of <i>Our National Mission</i> priorities and education reforms</p> <p>Accountability: Legislative responsibility to hold schools, local authorities and regional consortia accountable for school 'performance'</p>	<ul style="list-style-type: none"> • The Welsh Government needs to understand the school system as a whole. Due to the number and variety of organisations and learners it encompasses, standardised, quantitative data (i.e. collected consistently across all partners) is often most valuable as it can be aggregated. • The Welsh Government also needs to understand the effectiveness of the reforms. Quantitative, standardised data is valuable for gaining this national level picture. • There was however some disparity between different policy teams consulted in terms of the level of data they felt they need. This was often driven by how 'measurable' the policy areas within their remit are. For example, those in the Curriculum team noted the difficulties they may have with

Transparency:
Legislative
responsibility to report
on services;
commitment to
producing an
evaluation of the CfW
reforms

understanding the ‘success’ of the reforms –
for example, how to understand
progression.

System and data mapping

- 4.3 We carried out a system mapping exercise to understand the relationships between these key stakeholders. The findings are summarised in system maps (Figures 4.1 and 4.2 below).
- 4.4 The first map (on the following page) outlines relationships between key stakeholders within the school system in Wales through the lens of funding relationships, information sharing relationships, and process relationships.
- 4.5 This exercise helped to identify the formal relationships between different stakeholders that often mean data needs to be shared between them. For example:
- **funding relationship:** the Welsh Government provides funding to schools. Data may be required to determine appropriate funding levels
 - **information sharing relationship:** Schools are required to share information with Estyn so they can carry out inspections
 - **process relationship:** Local Authorities and regional consortia support schools to develop and carry out Development Plans. These organisations find it useful to receive information schools to help determine the support they provide.

Figure 4.1: Mapping of funding, processes, and information sharing across the school system in Wales

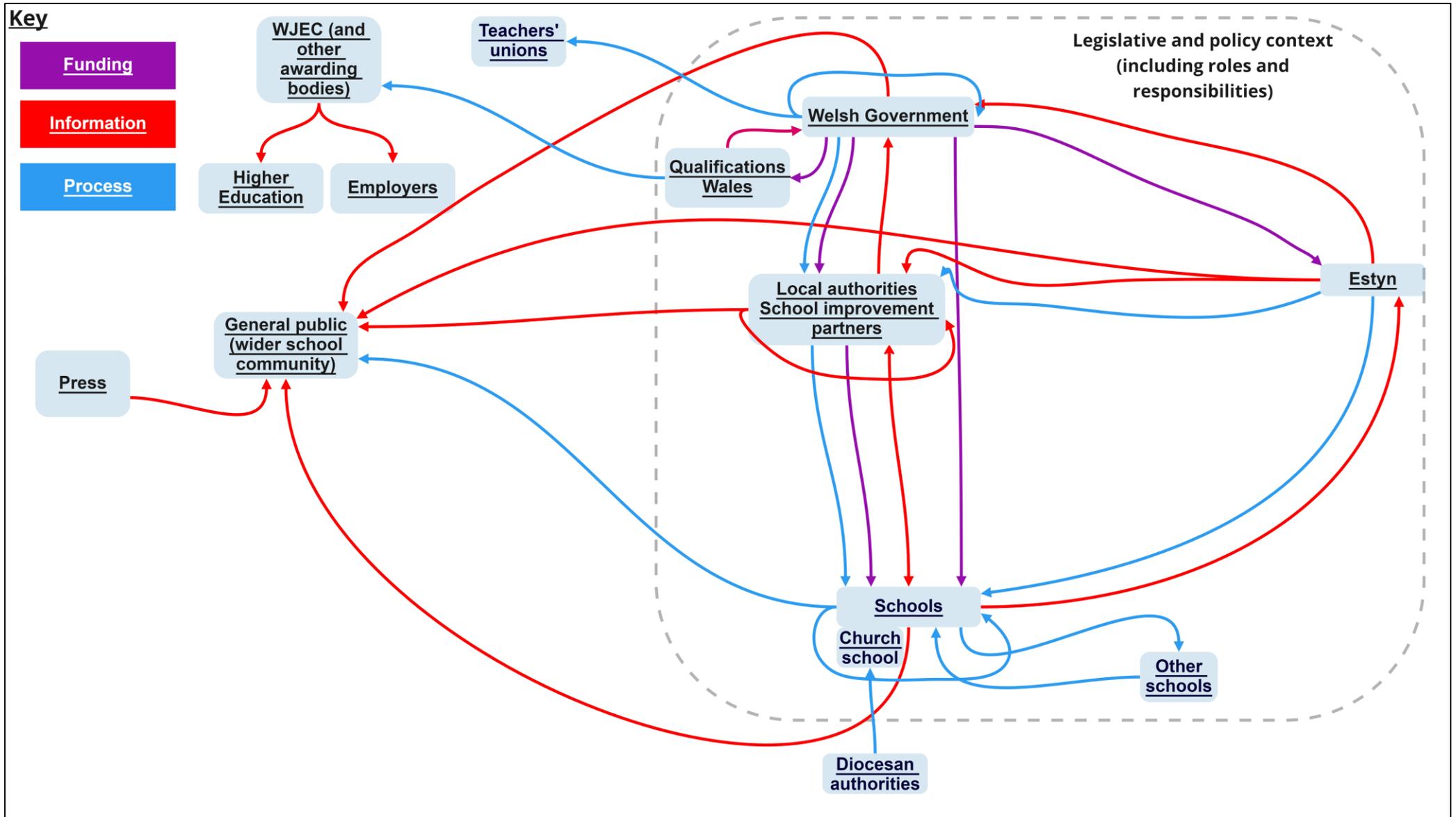
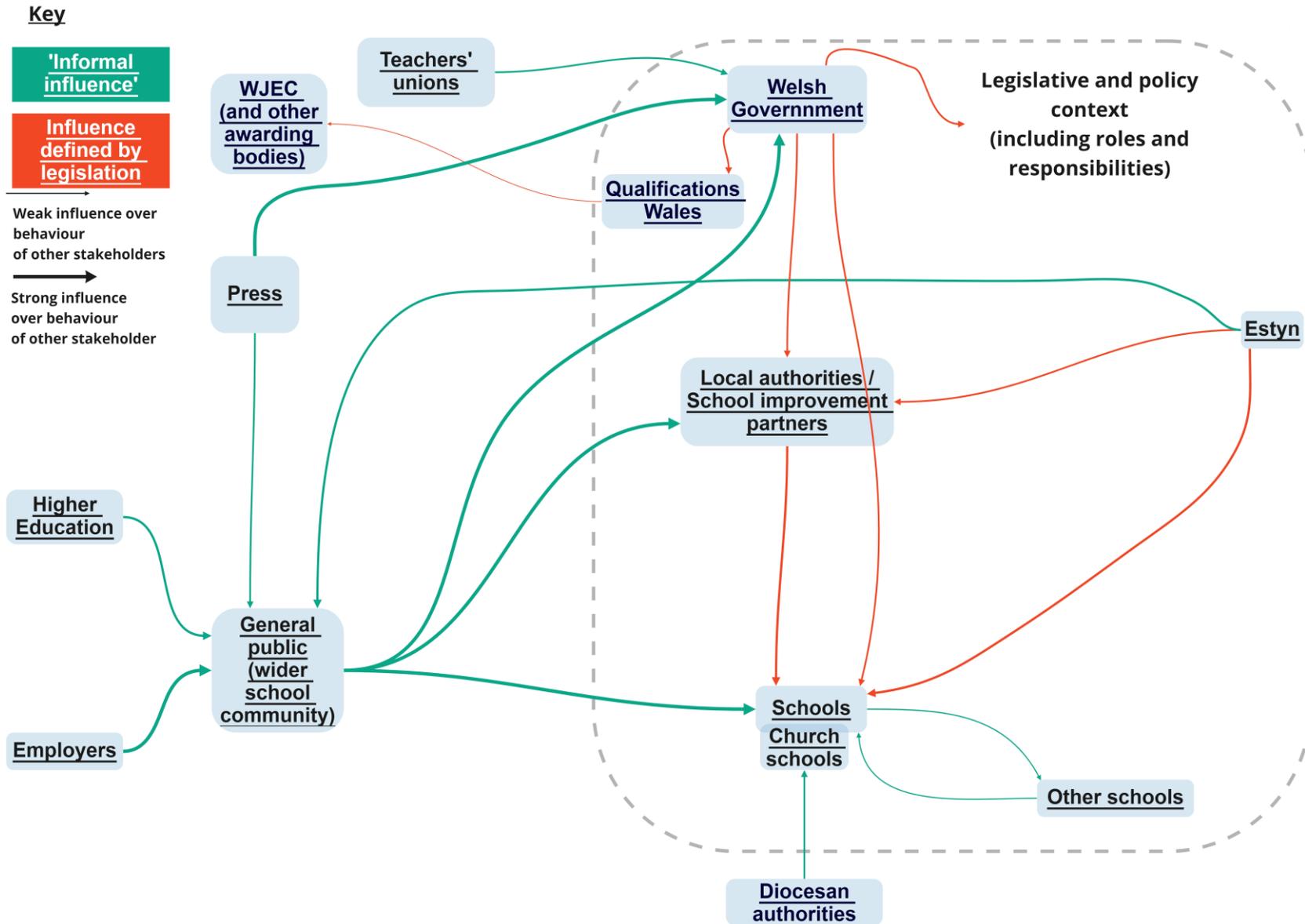


Figure 4.2: Influence mapping across the school system



4.6 The second map (Figure 4.2) describes the power flows within the school system in Wales, separated by informal power, and power defined by legislation.

4.7 This exercise helped identify the less formal ways in which data and information may be required and how the power dynamics between stakeholders could influence the data and reporting produced. We also considered how the publication of data and reporting could influence the school system. For example:

- **informal influence:** . Higher education institutes have informal influence over the general public, in that their policies around which learners they accept, will influence what the general public likely want the learners close to them to gain from schooling
- **influence defined by legislation:** Local authorities have certain statutory duties (i.e. providing schools with support) that give them the authority to ask schools to share data to inform their support offer.

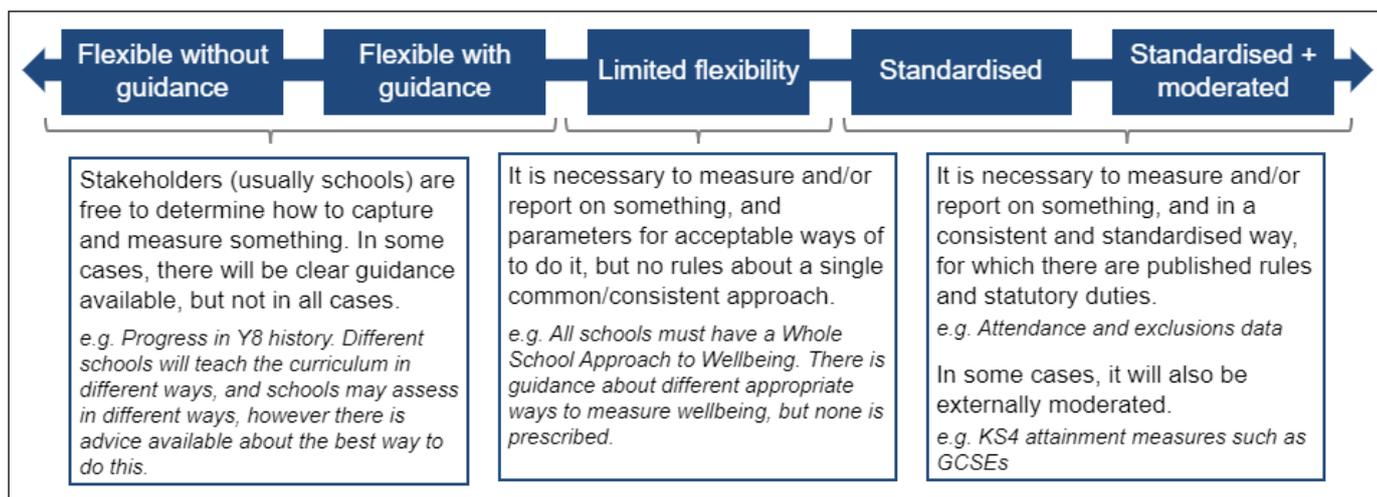
Defining key elements of the data and information ecosystem

4.8 During Phase 1 we also sought to define several component parts of the data and information ecosystem. The Welsh Government had not attempted to formally define the ecosystem before, so it was useful to establish common language and mental models for key concepts (e.g. types of data and indicators) to enable more meaningful and nuanced conversations with partners.

Standardised versus flexible data

4.9 There is, of course, a huge amount of data and information used by all the partners in the school system to carry out their core functions. This ranges from insights from teachers' observations of individual learners, through to bespoke assessment or other structured data collection within individual schools, to the consistent and moderated outcomes data from KS4 assessments. We therefore created definitions for the different levels of flexibility of data that sit across this spectrum (Figure 4.3).

Figure 4.3: Spectrum of data and information flexibility within the ecosystem



- 4.10 On the right is standardised data. This is any data that is collected and/or reported on in a consistent and standardised way across multiple organisations (e.g., several or all schools, all local authorities). In some cases, standardised data collection and analysis/reporting data may involve stringent guidance and/or be externally moderated, for example data items in the PLASC or KS4 qualifications outcomes.
- 4.11 At the other end of the spectrum is flexible data, where stakeholders are free to determine how to capture or measure something, if indeed they want or need to at all. In some cases, there may be guidance available to support this
- 4.12 In the middle is data with limited flexibility. For this type of data, it is necessary for a certain group of stakeholders to measure and/or report on something, and there are parameters or acceptable ways to do this, but no rules about a single common/consistent approach. Wellbeing would fit into this category within the current ecosystem: the Welsh Government mandates that schools must take steps to understand the wellbeing of their learners, and there are tools and guidance available to support them to do this, but none are prescribed.

Types of data and indicators

- 4.13 We also found it useful to draw a sharper distinction between different kinds of data and indicators. For example, in common parlance in the Welsh school system the term ‘indicator’ is used as a catch-all to refer to quite a range of different kinds of measures, which can, in reality, have very different effects depending on how they are used to summarise and report on information. For example, over recent years, different kinds of indicators used to summarise KS4 qualifications outcomes data have driven very different behaviours within schools. Table 4.2 outlines the typology

and definitions we created. They enabled us to unpick the effects of different kinds of indicators when used in the school system.

4.14 It should be noted that the typology and definitions in Table 4.2 are specific to the unique Welsh school system. Many other definitions exist in academic and business literature for terms like metric and indicator, but tailoring definitions to the Welsh context enabled more meaningful conversations with stakeholders. For instance, the Welsh Government and other partners generally avoid the terms metric and measure due to their associations with previous approaches (i.e. pre-coronavirus) to summarising KS4 attainment (previously called ‘KS4 performance measures’). In this project we therefore used the term indicator instead and distinguish between the different kinds of measure that sit within this category when relevant.

4.15 The rows in Table 4.2 are ordered from lowest to highest in terms of the risks involved with using or publishing a type of indicator, and the feedback received from partners about its potential to drive unintended negative consequences.

Table 4.2: Types of quantitative data and indicators used within the Welsh education ecosystem

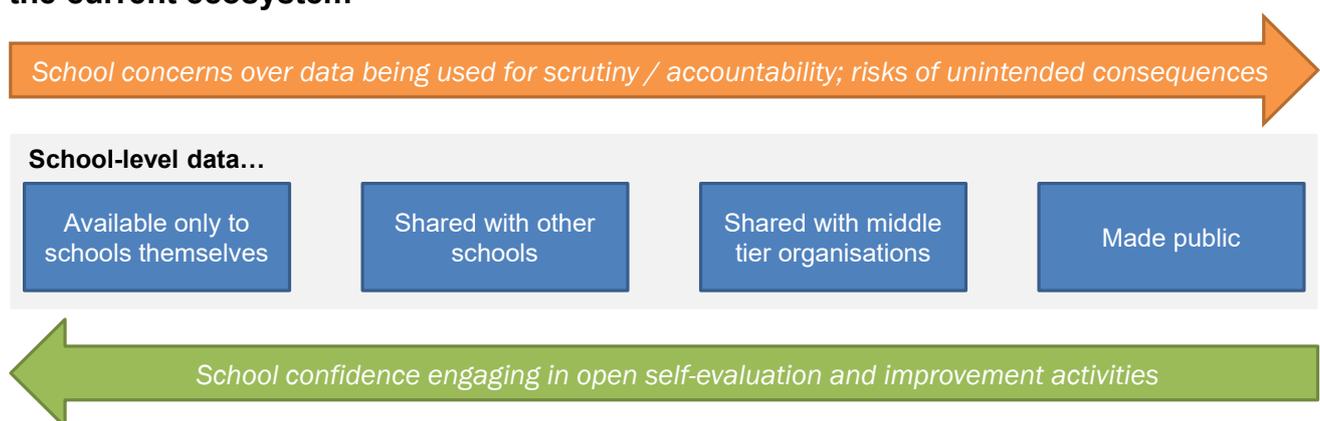
Data type	Definition	Example
Raw data	All the data items collected from a particular assessment or about a particular topic organised / presented in a structured way.	Data contained in a spreadsheet with the GCSE results for all learners of a particular school.
Statistic	Descriptive summaries of raw data with limited direct insight into performance.	The number of learners that sat a particular GCSE subject in 2022.
Indicator – metric	A measure that provides a useful summary of raw data about something being observed, but which is not perceived as a critical measure of success / achievement	Percentage of learners reporting a wellbeing score of between five and seven (out of 10) in a wellbeing survey.
Indicator – indicator	A metric with some reference point to a strategy, plan, or performance framework, such as an agreed standard or benchmark.	Proportion of learners with session attendance of 95 percent or more.
Indicator - comparison	Presenting indicators for one organisation or group alongside those of another, similar organisation or group.	Bar chart with the average Capped 9 points scores for a family of schools.
Indicator – rank	Ordering items on a scale according to their performance for a given indicator.	League table of Capped 9 points scores for all secondary schools in Wales, ranked from highest to lowest.

Indicator – summative judgement	An indicator that ascribes a definitive value judgement	Colour coding (Red, Amber, Green) the average Capped 9 points score of a particular school.
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Implications of different approaches to sharing data

- 4.16 The final area where we attempted to bring greater clarity is data sharing. It is important to bear in mind that the extent to which information is shared within a system impacts upon the practices and behaviours of the individuals and organisations within that system, and vice versa.
- 4.17 For example, schools may feel more confident that sharing information about a particular aspect of learning with other schools will result in a collaborative discussion and self-evaluation and improvement, than if they were to share the same information with the Welsh Government, whose function is predominantly one of accountability. Similarly, schools typically want to be able to control the level of school-level data shared with school communities because, justified or not, it could invite questions and challenge about aspects of learning and the school environment.
- 4.18 Figure 4.4 describes at a high level how school attitudes might change with different levels of data sharing. This also illustrates how, in complex, multi-stakeholder systems like education, there are instances in which core functions of self-evaluation and improvement might conflict with accountability and transparency.

Figure 4.4: Trade-offs between core functions with different levels of data sharing in the current ecosystem



- 4.19 Furthermore, the relationship between data sharing and stakeholder practices and behaviours is not fixed. Rather, current practices and behaviours around the use of data and information in an ecosystem influence attitudes and confidence towards

data sharing, and vice versa. This usually operates in virtuous or vicious cycles: if the practices and behaviours of organisations and individuals receiving data are geared towards enquiry, self-evaluation and improvement, the organisations and individuals sharing data will become more open to sharing their own data, and so on; if practices and behaviours are overly skewed towards scrutiny and accountability, those sharing data will be less inclined to do so in future.

4.20 This point is very relevant for the Welsh Government not only as it considers the ultimate version of the data and information ecosystem it wants to create, but also the process and steps it takes to get there.

Other insights and implications from Phase 1

4.21 **Decision to focus predominantly on needs relating to standardised data:** the CfW empowers schools to design their own curricula and assessment frameworks. The recent School improvement guidance also encourages schools to draw on a broad range of locally relevant data and information to inform self-evaluation and improvement, rather than focusing mostly or solely on qualifications results. Beyond this, many other stakeholders' responsibilities under the reforms require careful consideration of individual schools' circumstances, such as:

- schools define their own processes of self-evaluation and improvement
- Estyn inspect schools based on scrutiny of a wide range of evidence and careful consideration of each school's context. School self-evaluation and improvement planning forms part of this evidence base
- local authorities and regional consortia use individual school development plans (based on self-evaluation) as part of how they identify where schools require support.

4.22 *Implication:* allowing schools and stakeholders to consider topics in their own way as part of ongoing self-evaluation, is key to the success of the reforms. We therefore determined that the research project should focus on identifying areas where standardised data was most valuable, allowing for flexibility in other areas.

4.23 **Capture the breadth of learning:** stakeholders within the system need to explicitly consider learner experiences more holistically than the historic focus on attainment. For instance:

- school self-evaluation may need to consider topics including vision and leadership and curriculum quality (e.g. teaching, progression, wellbeing)
- Estyn inspections cover topics ranging from learning and progression, wellbeing and attitudes to learning, and care, support and guidance, to teaching and learning experiences including assessment, and leadership and management.

4.24 *Implication:* the data and information ecosystem must reflect the breadth of learning as defined in the CfW – and this may involve the creation of new or unique indicators.

4.25 **Risks of using quantitative data and information:** initial consultation and system mapping surfaced several challenges that stakeholders experienced under the previous, pre-coronavirus data and information ecosystem (e.g. encouraging competition rather collaboration between schools, some subjects and learners deprioritised at KS4). These were extrapolated into a set of general risks involved with using quantitative, standardised data to carry out any of the core functions.

- **inherent measurement risk** – any summary indicator (e.g. Capped 9 points score, percentage of sessions attended) or identifier (e.g. learner eligibility for Free Schools Meals) will always be a simplification of reality. Stakeholders should therefore be cautious about attaching too much significance to any single indicator, consider them in their proper context, and ensure they are a sufficiently close proxy to the thing they are trying to understand
- **value judgements** – this above risk is increased when indicators ascribe value judgements (e.g. colour coding, summative judgements, league tables). There is a risk that decisions (e.g. funding, improvement, accountability) based on such value-judgement indicators without proper context will be inaccurate or unfair
- **ease of measurement** – it is an unfortunate truism that what gets measured gets managed. If two aspects of the CfW are deemed to be equally as important, this should in theory be reflected in the kind and quantity of data and information used to understand them. In reality, some things are harder to measure than others, so for aspects of the curriculum that will not be measured, whether because it is felt to be inappropriate and/or impractical, the Welsh Government must consider ways to ensure they are still prioritised sufficiently
- **completeness** – similarly, if indicators are only available or reported on for only part of some aspect of learning (e.g. KS4 attainment for some subjects but not

all, wellbeing for only some learners) it will naturally focus attention on that part, potentially to the detriment of equally important but less measurable things.

- 4.26 *Project implication:* these risks were included in the criteria used to help develop recommendations, to ensure they did not create (or at least limit) unintended negative consequences and encourage the approach to using data and information outlined in School improvement guidance.
- 4.27 **Principles for good indicator design** – five principles emerged from our first phase of research for how indicators for different aspects of learning should be employed in the new ecosystem. These cover both the design of indicators for specific aspects of the CfW, as well as how the full range of indicators should come together to describe the school system as a whole. Indicators should:
- aim to provide an understanding of distance travelled and/or value added as opposed to attainment or situation at a point in time only [*Progress*]
 - reflect the duration of learning, not just the end point [*Completeness*]
 - go beyond a narrow focus on attainment and instead capture the full breadth of priorities within the education reforms (e.g. four purposes, wellbeing) [*Breadth*]
 - provide sufficient contextual information (e.g. school or regional population, school type) to enable users to interpret them meaningfully [*Context*]
 - be used first and foremost for self-evaluation and improvement, for instance to prompt questions and reflection both within and between different partners, rather than to make summative judgements [*Promote self-evaluation*].
- 4.28 *Project implication:* as above, these principles were used to inform the design of both specific recommendations and to ensure they made sense as a whole.

5. Findings – mapping stakeholder data and information needs

- 5.1 The main objective of Phase 2 was to understand and map in detail education stakeholders' use of and need for data and information, and identify gaps and challenges and areas for possible changes and improvement. This section summarises our findings.

Summary of data and information needs – key stakeholders

- 5.2 Following extensive engagement with key stakeholder groups about their data and information needs, combined with additional desktop research to fully understand their legal and other responsibilities, we created detailed user needs documents for each key stakeholder. These were sent to representatives of each organisation for their validation and review. We also asked them to consider, for aspects of the data and information ecosystem most relevant to them, whether any new or different standardised data is necessary to meet their needs fully. We received rich feedback through both written responses and follow-up conversations. The topics covered in these detailed user needs documents are summarised in Table 5.1 and an example of a full detailed user needs document appears in Annex B.

Table 5.1: Principal data and information needs of key stakeholders

Estyn	Local Authorities	Regional consortia	Schools	Welsh Government
<i>Inspections – schools</i>	<i>Supporting school self-evaluation</i>	<i>Supporting school self-evaluation</i>	<i>Self-evaluation & improvement</i>	<i>System self-evaluation & improvement</i>
Learner Progress	Experience, knowledge, and skills	Experience, knowledge, and skills	Experience, knowledge, and skills	Learner attainment
Learner wellbeing	Learner Progress (towards four purposes)	Learner Progress (towards four purposes)	Learner Progress (towards four purposes)	Learner wellbeing outcomes
Learner characteristics	Learner Wellbeing	Learner Wellbeing	Learner Wellbeing	Professional learning outcomes
Attitude to learning	Learner behaviours and attendance	Learner behaviours and attendance	Learner behaviours and attendance	Learner characteristics
Equity	Equity	Equity	Equity	Communication
<i>Inspections – Local Government Education Services</i>	<i>Improvement continuum and determining support required</i>	<i>Improvement continuum and determining support required</i>	<i>Other legislative responsibilities</i>	<i>n/a</i>
Standards of learning and progress	Schools causing concern	Schools causing concern	Progress towards FG targets	
Attitude to learning	Own self-evaluation & improvement	Own self-evaluation & improvement	Wellbeing and mental health	
Characteristics	Support and improvement services	Support and improvement services	Characteristics	

Table notes: rows highlighted grey indicate the overarching purpose of the data and information needs in the rows beneath. For instance, for Estyn need to understand ‘Standards of learning and progress’ as part of their overarching purpose of inspecting Local Government Education Services.

Needs, gaps in current data and information, and ideas for changes – key stakeholder summaries

5.3 Table 5.1 illustrates the wide range of data and information needs of key stakeholders. This section summarises in general terms the principal needs of each key stakeholder for carrying out its core functions, priority gaps in current data and information, and where new or different information could be beneficial and the extent to which it should be standardised. It should be noted that over the course of researching stakeholder needs we spoke to several individuals from the same

organisation, whose views did not always perfectly align, so in some instances the views of individuals might diverge from the general picture.

Estyn

- 5.4 Experience, knowledge, and skills: Estyn's school Inspection Framework evaluates learners' understanding in a broad and balanced way, drawing on data for attainment (e.g. KS4) as well evaluating wider learning, progress, and achievement through a range of qualitative methods (e.g. lesson observations). Currently available standardised data is valuable for inspectors, although this is always used to sense-check and triangulate against what inspectors see in the school, which is their primary source of information. Estyn recognised shortcomings in the breadth of current KS4 indicators and saw the potential for a wider suite of standardised assessments of experience, knowledge, and skills. However, like schools, they believe that there is a need for caution when introducing any new indicators. The benefits of any new indicators need to be considered alongside the possible unintended consequences of these indicators driving perverse incentives and behaviours in schools. It should be noted that Estyn do not receive data from personalised literacy and numeracy assessments.
- 5.5 Wellbeing: to understand learner wellbeing, inspectors make use of a range of proxy indicators already available (e.g. attendance, exclusions) and also issue their own questionnaires (for learners, parents and carers, governors, staff). These broadly meet their needs. However, Estyn noted that the Welsh Government does not require schools to collect data on learner wellbeing in any single, standardised way. Since Estyn can only report during school inspections on data that is collected, validated, and published by the Welsh Government, this is a potential gap. Estyn will however consider (but not directly report on) any data and information provided to them by schools during inspections, so if a school implements its own tools to understand learner wellbeing, Estyn can still draw on the findings during inspections.
- 5.6 Equity and learner characteristics: Estyn reported that currently available data on learner characteristics gives them some ability to analyse school performance by different populations and groups and to contextualise wider inspection findings. However, they would find a greater range of learner characteristics data useful to nuance this analysis further, including protected characteristics. The eligibility for Free School Meals indicator (eFSM) was reported to be insufficient for

contextualising wider aspects of school performance to the level of detail required (e.g. proportion of pupils from more or less affluent backgrounds, rural poverty).

- 5.7 Other gaps and issues with current data and information for the purpose of school accountability include: a lack of consistency in the way schools record 'off-rolling' of pupils, and therefore questions over data quality; that the Welsh Government do not publish pupil movement data, which would be valuable; and a lack of information on learner destinations post-16 as an indicator of achievement.⁴
- 5.8 Local Government Education Services (LGES) inspections: generally, inspectors use the reports from individual school inspections to inform LGES inspections and draw on school-level information (e.g., attendance data) for any additional analysis. In recent years, LGES inspections have avoided aggregating school outcomes to a local authority level due to risks of potential unintended consequences (e.g. focus only on standardised and comparable indicators, failure to account for individual school population and context). This practice exemplifies Estyn leadership's nuanced and sophisticated understanding of the risks of using quantitative indicators in isolation to assess performance, which aligns closely with the principles set out in School improvement guidance. This was consistent with the leadership of other organisations we engaged with. Estyn do not require any different or additional standardised information for thematic reports than what is available now (i.e. academic year 2021/22).

Local authorities

- 5.9 Experience, knowledge, and skills: local authorities' strongest feedback centred on learner experience, knowledge, and skills, and progression. For the former, local authorities felt that current assessments of literacy and numeracy function well: frameworks are clear with guiding expectations at each age range, online assessment systems are relatively straightforward for schools to use, and the resulting outcomes data is useful for them and schools. Therefore, since the new curriculum aims to give equal weight to currently less well-defined skills such as critical thinking and resilience, one local authority suggested that additional personalised assessments could be introduced for these skills. However, this local

⁴ This need may however be addressed by new [national statistics](#) for destinations for learners finishing a learning programme in 2017/18 and 2018/19 were published on 27 April 2022. the Welsh Government intend to issue individual school and college level reports for the 2017/18, 2018/19, and 2019/20 cohorts in September 2020. Source: [Post-16 consistent performance measures, Update July 2022](#)

authority also recognised the challenge of creating the assessments and process/systems required to do this. For instance, another local authority was sceptical whether a skill like critical thinking could ever be adequately assessed in a standardised way that would create meaningful, comparable quantitative data.⁵

- 5.10 Progress: feedback was similar for progress. All local authorities agreed on its importance, with one commenting ‘if you strip back the new curriculum, progress is what it’s really all about.’ However, they diverged on how and whether in practice it is possible and appropriate to capture learner progress through a standardised assessment. One local authority felt that assessing progress, for instance against the Progression Steps within each Area of Learning and Experience, using some point-in-time measure, contradicts the very principle of continual progression. Another had strong opposing views that some form of progression framework with corresponding assessments and age-related expectations, akin to literacy and numeracy, is necessary for the new curriculum to be implemented successfully: ‘there is a void in the consistency and assessment of progress.’⁶
- 5.11 Wellbeing: local authorities felt that schools in their area have a decent grasp of learner and staff wellbeing from current self-evaluation approaches. Various surveys that are available for use by schools – such as Schools Health Research Network (SHRN) and HAPPEN) - provide useful outputs. But local authorities felt that more consistent, regular data and approaches to understanding learner and staff wellbeing in schools would be valuable. This would, for instance, help them to commission effective wellbeing support services available to schools in the area.
- 5.12 Other key findings from local authorities included: local authorities feel able to identify schools that are a cause for concern – one of their statutory duties – using current data and information (e.g. ongoing conversations, observations), that is, during academic year 2021/22; there is no national framework and assessment for Welsh language learning; eFSM is too narrow an indicator to fully understand and respond to the impacts of deprivation on learning; and they did not have good visibility of bullying issues and suspect that bullying incidents are under-reported. Finally, some local authorities noted that they create their own improvement

⁵ A range of evidence-based tools exist for measuring skills relating to critical thinking do exist, for instance those compiled in the [Education Endowment Foundation SPECTRUM database](#). However, we did not identify any education system internationally that is using them in a standardised way to assess all learners.

⁶ This person stressed that such a framework should be primarily to support teacher practice development rather than accountability.

'matrices' for schools in their areas, which collate published KS4 outcomes and other indicators, since this information is not provided to local authorities by the Welsh Government in a timely and accessible format.

Regional consortia

- 5.13 Summary of data and information needs: of the key stakeholder groups consulted, regional consortia were most satisfied with current levels of data and information for carrying out their role supporting schools' self-evaluation and improvement. They were also generally against the introduction of additional standardised data, whether that be assessments (e.g. skills, progress), surveys (e.g. wellbeing), or other data items (e.g. learner characteristics). This was for two main reasons.
- 5.14 First, even if a particular standardised assessment or survey is not introduced for school accountability purposes but rather to aid with school self-evaluation and improvement, there might always be the risk that the Welsh Government publish results in a way that compares or ranks the performance of individual schools. This has led to unintended consequences in the past. For example, using the Capped 9 score as a performance indicator and publishing league tables and other comparisons between schools has led to some schools 'entering learners for qualifications that provide points as opposed to the 'right' qualifications for them.'
- 5.15 Second, regional consortia felt that data and information available within the system currently should be sufficient to enable schools and middle tier stakeholders to carry out their respective self-evaluation and accountability functions. For example, under the CfW schools design their own curricula and assessment arrangements; the Welsh Government provide a range of guidance and tools that schools can use flexibly to support self-evaluation. Schools should therefore be able to develop and use their own approaches to understand, say, the wellbeing of learners, without the need for a standardised wellbeing survey. By extension, regional consortia feel able to support schools in their region with their self-evaluation and improvement activities using qualitative information gathered through their relationships with schools and the data from schools' own self-directed learning activities. If, as a result of this approach, the Welsh Government are unable to fulfil their own self-evaluation and improvement functions for any part of the school curriculum, this gap could be addressed through assessment or other testing collected on a sampled

basis, and without linking the results back to individual schools. This is in accordance with Recommendation 68 of the [Successful Futures review](#) (2015).⁷

Schools

- 5.16 Schools' data and information needs generally relate to their own self-evaluation and improvement, and ensuring transparency with local school communities. Like other stakeholder groups, schools felt that the parts of the data and information ecosystem where greater definition is most needed correspond to aspects of the CfW that are the most new or different from the previous curriculum, namely experience, knowledge, and skills (encompassing attainment); learner progression; and learner and staff wellbeing.
- 5.17 Experience, knowledge, and skills: all schools stressed the need to move away from the previous, narrow focus on end-of-education/phase academic attainment (i.e. KS4) for both school improvement and accountability purposes and in the way that education policy and the monitoring of its performance is communicated to the public. Schools and other education settings are not averse in principle to using indicators of academic attainment (e.g. KS4) or skills (e.g. literacy and numeracy), rather to the way that such indicators have been used formerly to create league tables and other unhelpful comparisons between schools which do not account for local context. Indeed, some schools mentioned that some comparisons between their own learners' attainment and other groups are valuable (e.g. to a national average or the results of statistical neighbour schools). But schools would like these kinds of comparisons to be made available only to schools themselves for self-evaluation purposes if there is a possibility they could be used as 'blunt' indicators of attainment by middle tier organisations or the Welsh Government. There was also some interest in expanding the use of personalised assessments for key skills such as critical thinking and digital literacy, of the kind already used to understand the mandatory skills of literacy and numeracy, to aid understanding of learner skill development.
- 5.18 Progression: this was the most important issue for many schools, due to its central role in the CfW. Some schools welcomed the idea of a quantitative assessment framework for progress, aligned for instance to Progression Steps, saying that it

⁷ Recommendation 68 states: "the Welsh Government should no longer gather information about children and young people's performance on a school-by-school basis but should monitor performance in key aspects of the curriculum through annual testing on a sampling basis."

would help schools ensure their learners do not unwittingly fall behind their peers. Other schools were more cautious. This is because, as one head teacher put it, 'it is vital to understand and measure progress holistically.' It is unclear whether it would be possible to create a meaningful quantitative framework that corresponds to the currently qualitative and holistic Progression Steps framework (or other aspect of the curriculum related to progression, such as Principles of Progression). And even if the Welsh Government created such a framework, schools were hesitant about the amount of time it would take to administer it.

- 5.19 Wellbeing: there was a similar picture for wellbeing. All schools agreed that this should be 'as important as attainment, skills, and progress' under the new curriculum, which suggests that it should have equal stature in the data and information ecosystem. Some schools therefore felt that introducing some form or standardised survey or other process for capturing data on the wellbeing of learners would provide valuable information for self-evaluation purposes. On the other hand, other schools felt that the time it would take to implement a standardised learner wellbeing survey may not be justified by the value of the information it would generate. Measuring wellbeing in a holistic, meaningful way is also difficult. Regardless of these challenges, if a standardised tool for capturing wellbeing is introduced, schools felt that school-level outputs should only be available to schools themselves for self-evaluation and learning, not to other organisations or stakeholders for accountability or transparency purposes. Schools felt that staff wellbeing was of similar importance to learner wellbeing, but their approaches to understanding it are not currently as rigorous or consistent.
- 5.20 Behaviour and attitude to learning: schools felt that the way data relating to learner behaviour and attitudes to learning (e.g. attendance, exclusions) is captured and used currently is broadly satisfactory, though some schools cited concerns over the reliability of indicators for attendance, exclusions, and school moves in particular due to differences in school practice (e.g. attendance measured at different times of the day, different processes for managing exclusions). This limits schools' ability to meaningfully compare themselves with other schools, which they felt would be valuable.
- 5.21 Equity and learner characteristics: school staff understand the majority of what they need to about their learner population from their everyday interactions with learners and qualitative processes. The learner characteristics data items captured in the

PLASC they also felt are broadly adequate. The eFSM indicator was however seen as too crude a measure of school population to properly contextualise other aspects of school performance.

- 5.22 Destinations: whilst outside the scope of this research study, when discussing end-of-school attainment, almost all schools mentioned their desire for the school system to prioritise longer-term learner destinations (e.g. progress to Further and Higher Education, entry and sustainment of employment) as an indicator of learner achievement and overall school performance. This is especially true for special schools, who feel that KS4 qualifications outcomes are only a partial reflection of the progress and achievements of some learners with ALN.

Welsh Government

- 5.23 We spoke to several policy teams and sub-teams within the Welsh Government. Due to their varying roles and responsibilities they often had different perspectives on the use of data and information, current gaps, and potential changes. Given their need to understand aspects of learning at a national level, they did however generally call for greater levels of consistent, standardised data that could be aggregated at a national level relative to stakeholders at other tiers – but broadly noted that quantitative data alone is not enough to gain a complete picture.
- 5.24 Welsh Language: this team requires data to understand how the country is progressing towards meeting the targets set in the [Cymraeg 2050: A Million Welsh Speakers](#) strategy, in order to develop or alter policy interventions accordingly. Quantitative data is currently available at a pupil-level on Welsh-speaking (including Welsh KS4 results), but it was felt that additional qualitative information would be valuable to support a fuller understanding of the levels of Welsh-speaking within schools and that there were currently gaps in their understanding.
- 5.25 Schools Research: this team are not users of data themselves, but produce analysis to support ministers and officials with their own decision-making and policy development. They stated that it was beneficial to them to have as granular data as possible, but noted this would need to be anonymised.
- 5.26 School Effectiveness and Improvement: this team tends not to use data themselves. Rather, their role is to carry out analysis and provide reports to meet the needs of other system stakeholders, for example data packs for schools. They noted that data that could help them to understand the effectiveness of schools and data from

across the learner journey – as opposed to just data from the end of secondary education – would be valuable.

- 5.27 Curriculum and Assessment: officials we spoke to noted that the data currently available in the ecosystem and the way it is used does not fully align with the ethos of the CfW reforms in that it's focused on qualifications and PISA results. Data on progress is limited, in part because it is inherently difficult to measure in a way that is proportionate. As a team, they also need to understand how the reforms are being rolled out and their ongoing effectiveness. The Assessment sub-team generally use anonymised, national-level data gathered from numeracy and literacy personalised assessments to understand trends over time. They raised queries around how easy it would be to measure wellbeing or progress in a meaningful way – but noted it was important for the new reforms. The team also identified a gap in currently available data around learner skills, citing problem solving and critical thinking as examples.
- 5.28 Professional Learning: this team felt there is too much focus within the system currently on quantitative indicators. These have created perverse incentives in the past, and aspects of the CfW that should be most important for the Welsh Government are not quantifiable, such as curriculum design and implementation. They did note that quantitative indicators from standardised data collection are sometimes necessary, otherwise there would be gaps understanding at a national level. But this should be limited, and the risks of using such indicators could be mitigated by presenting the findings from observations and other qualitative information alongside them. They are interested in understanding staff wellbeing and professional learning in this way, that is, a core of relatively limited standardised data, nuanced by qualitative insights.
- 5.29 School and School Workforce Statistics: like the School Effectiveness and Improvement team, this team are not users of data themselves, but produce statistics to inform the work of other teams. They noted that there is currently a big gap in understanding about standards and progress before KS4, which limits the Welsh Government's ability to self-evaluate. This team felt that the School Workforce Annual Census (SWAC) has greatly improved the Welsh Government's understanding of the school workforce, but other topics could be included in future such as wellbeing.

5.30 Equity in Education and Support for Learners: this team need to ensure the Welsh Government is fulfilling its duties under the Equality Act, and as such, need to be able to compare outcomes and other indicators for different groups of learners. Generally, topics of interest were attainment and wellbeing. They echoed other stakeholders in highlighting tensions between some stakeholders around the use of data and information (e.g. middle tier susceptibility to use information intended for self-evaluation purposes to increase school scrutiny and accountability), which can create perverse incentives and lead some schools to present their data in the 'most positive light'. They also raised concerns that inequalities in learner experience could go unnoticed if standardised data is minimised.

Needs of other stakeholder groups

5.31 We also captured the needs of other groups with a stake in the school data and information ecosystem through a range of qualitative consultation and surveys:

5.32 **Diocesan authorities:** we spoke with a representative of Catholic Education, which represents Catholic education diocese, and received written feedback from a representative of the Church in Wales. The key finding was that Diocesan authorities essentially need the same kind information about individual schools that they are responsible for as local authorities, but that this is not always made available to them in a timely manner and it is not always complete. This means Diocesan authorities have gaps in their understanding of learner experiences in schools for which they are responsible, making it more difficult and/or time consuming to fulfil their improvement role than it should be.

5.33 Diocesan authorities need a broad range of indicators and contextual information about the schools they are responsible for, and would also value being able to compare these schools in a simple, meaningful way.

5.34 **Education otherwise than at school (EOTAS):** we gathered the views and needs of EOTAS stakeholders from focus groups with local authority EOTAS teams. EOTAS varies across Wales in terms of provision and coverage. There are significant differences, for example, between provision near major urban centres like Cardiff, where more variety of provision is available, and some rural areas. Because of this, collection of and approaches to using non-statutory data also vary: providers will have different types of sources of data, that provide data at different

frequencies, with different provision and coverage objectives leading to different desired outputs, making it difficult to standardise data collection.

- 5.35 There is less data collected about learners in EOTAS provision than those in mainstream settings – several fields in the PLASC are not included in the EOTAS equivalent, the EOTAS Census. However, focus group participants felt that, in principle, the same data collection requirements should exist for EOTAS and mainstream learners. They also felt that there is a reliance on attendance and exclusion data to understand the state of provision and learner needs. However they noted that increasingly local authorities and schools are focusing on ‘softer measures.’ Participants mentioned that wellbeing data and qualitative descriptions of a learner’s history are increasingly being used by both EOTAS providers and local authorities to understand the nature of EOTAS learners’ needs and develop suitable provision.
- 5.36 Focus group participants also said that EOTAS learners move more frequently between local authority areas. Tracking learners in data is challenging due to incompatible council software (systems don’t ‘talk to each other’), and past research into the cohort also highlighted a lack of consistency in understanding registration requirements for EOTAS learners. Participants felt it would be valuable to understand the learner’s journeys as they moved, particularly with a better understanding of their wellbeing. For this they said it would be valuable to have a baseline data set for each learner and a way to chart progress. Moreover, EOTAS education provision often requires collaboration across multiple agencies including social care and health. To enable this, data sharing agreements are put in place, and having less conflict between council systems would likely also facilitate these data transfers.
- 5.37 Other challenges and needs raised by Local Authority EOTAS providers included: current data relating to EOTAS provision and learner achievement and progress is broadly comprehensive, but it does not effectively reflect the work of day-to-day providers; EOTAS provision is ‘not given the status it deserves’, i.e. it does not get the same level of attention as mainstream settings within Welsh Government; data may not be highlighting to key decision-makers (e.g. local authority teams, the Welsh Government) what learners really need, with participants asking whether the right questions were being asked of the data; there are continued misconceptions both within the school system and amongst the general public about what EOTAS

provision involves, needs, and achieves; and there is a need to develop a better understanding of learners' wellbeing both before they move to EOTAS provision and once they are there, including whether provision is having a positive impact.

- 5.38 **Employers:** to understand the data and information needs of employers about the school system we spoke to representatives of Careers Wales, which leads careers planning and support for learners in Welsh schools (secondary and Post-16), and one of the four Regional Skills Partnerships, which are tasked with analysing economic challenges and likely growth areas to identify the skills needed in the workforce.
- 5.39 Careers Wales receives data directly from schools and find data on learner attainment and progression most relevant and useful for planning their own services. This includes learner level information used to target additional support activities. Careers Wales collect additional learner information relating to careers through a diagnostic tool called Career Check which is carried out with Year 10 learners. Other data is captured through conversations with heads of year or heads teachers, particularly to understand any ALN needs and learners at risk of becoming Not in Education, Employment or Training. (NEET). Careers Wales also get data uploads from schools 3 times a year and Careers Advisors have access to School Information Management Systems (SIMS), however these arrangements vary between schools. Careers Wales also have a compliance function and run audits of the effectiveness of career support provision in schools. These various data and information flows broadly function well at present and meet the needs of Careers Advisors.
- 5.40 One area where Careers Wales felt better standardised data is needed is around destinations. For instance, they suggested schools could collect additional, standardised data on the intended destinations of learners in the run up to leaving education and use this to measure against their actual destination. This could be both a valuable indicator of learner achievement for schools and the Welsh Government that puts learner voice at the heart of the system and would also help Careers Wales to interrogate and improve the quality of their own provision. This understanding should also consider sustained destinations drawing a line from initial intended destination to next actual destination, to longer-term outcome.
- 5.41 This was echoed by Regional Skills Partnerships. Their most important unmet data need related to better understanding learners' destinations after secondary and

post-16 education, and within this, what contact learners have with employers at different stages. Focus group participants were especially interested in understanding learners' experiences of employer contacts (e.g. how many contacts, quality and outcomes, breakdown by industry/sector). By accessing this kind of data, they could build a better understanding of what works and improve their approaches to employer exposure and work experience. Crucially, they reiterated the point made by Careers Wales around understanding not just the destination of a learner but whether that aligned with their interests and goals. More broadly, Regional Skills Partnerships need to be kept up to date with the development of the education reforms and topics covered in schools' curricula so they can continue to understand learner skills as they approach the job market.

- 5.42 **Further education:** we spoke to colleges to understand their current practices and data and information needs. Feedback naturally centred on how school learner-level data is shared with colleges, rather than how it is used for the core functions of self-evaluation, accountability, and transparency.
- 5.43 In terms of current data use, the Lifelong Learning Record statutory return captures a range of information about individual learners and their education and/or employment journey. From schools they receive individual learner KS4 qualification results, as well as data on learners who are vulnerable (e.g. those with ALN). All of these data points then also feed into curriculum planning and resource allocation within the institution. The main challenge they noted were issues with data outside of the Lifelong Learning Record being formatted in unhelpful ways like records of attendance being logged differently between schools and school reports holding varying content. This was one of the reasons why one of the participants in the focus group had stopped asking for references and attendance data.
- 5.44 When considering future needs, colleges would value a better understanding of the journeys of each learner to understand what they have struggled with in the past. It would also be helpful to have learners' development points passed on during their transition to further education to avoid the college or other institution having to start from scratch. Earlier data sharing between schools and further education settings would help support transitions and ensure all learners take the courses that are right for them. And similar to the ideas proposed by Regional Skills Partnerships and Careers Wales, further education settings would value information that captures learner voice which would help these organisations support learners with better

advice and guidance from the start of their time in Post-16 education. Participants also pointed out they would find it useful to get more standardised attendance data, learning progress data, and predicted grades with the idea to help advise learners and allocate resources internally.

- 5.45 **Learners:** learners saw their peers and sometimes teachers (depending on age group) as the best sources of information about their school environment and performance. Learners were generally keen to gain a better understanding about a range of aspects of their school environment, but wellbeing was for them the highest higher priority for any additional data collection.⁸
- 5.46 **Qualifications and attainment:** this was generally not as important for learners as for other stakeholder groups. Learners instead cared about wide aspects of their school environment and the school system more broadly. Areas of especial interest included: how schools supported them and their peers, particularly those from disadvantaged backgrounds and those with ALN; how schools (theirs and others) were tackling things like bullying and sexual abuse; learner rights; decisions around the design of the curriculum and what is or is not included in lessons; and issues of fairness and equity, for example boys having more options for sports periods. Learners in the older age group cited bullying as particular area of concern.
- 5.47 **Learner voice:** Finally, learners emphasised that they wanted their voices to be heard by their schools, and to see this reflected in actions and changes. This included being able to reflect on how they felt about their school, the environment, and teachers. For example, they wanted to be able to talk about their lessons and provide input into content, and to have space to reflect on their relationships with teachers. When thinking of ways to address this want, learners reacted positively to the idea of a learner voice survey.
- 5.48 **Parents and carers:** we engaged with parents and carers through both a survey and a follow-up workshop. The main issues raised by parents and carers with regard to data and information were: school accountability; learner wellbeing; school funding and cost effectiveness; and knowing more about teachers. Specific things parents and carers would like to know more about within their local school include:
- teacher qualification levels and teacher retention rates
 - proportion of learners also receiving private tuition

⁸ Insights gathered through two workshops for learners aged seven to eleven and 12 to 16 respectively.

- 'happiness' of learners, or similar indicators of wellbeing
- cost of teaching certain subjects, with Welsh language mentioned specifically.

5.49 Wellbeing: regarding learner wellbeing, parents and carers who participated in focus groups were interested in understanding what was available to support children's mental and emotional needs. There was also a more general interest in knowing the level of happiness of learners at school, and how the school was tackling issues like bullying and peer pressure. Generally, parents and carers were more interested in gaining a qualitative picture of the wellbeing of learners in their local school, as opposed to quantitative information about the frequency of incidents related to wellbeing (e.g. bullying) or scores / quantitative indicators (e.g. average learner wellbeing score out of 10).

5.50 Accessibility: being able to access information quickly and easily emerged a key issue from both the survey and focus group. Of the 50 parents and carers who answered the survey, slightly less than half said they had looked for data related to the school system, with the most popular topic being the latest breakdown of KS4 qualification outcomes at a specific school. Their experience of doing this was broadly negative, with challenges including that data was hard to find, of varying quality, or vague. Parent and carer responses ranged from five to seven (out of 10) when asked whether they felt they had adequate information about their local schools (one = not enough, 10 = all the information they need). Participants in both the survey and the focus group also expressed an interest in better access to information detailing school funding and budget use, which they reported was currently hard to find and interpret. During discussion in the focus group, parents and carers voiced that schools should publish their self-evaluations and action plans more visibly and in a format that is easier to understand so that they could ask questions (e.g. governors meetings) and hold the school accountable. Some parents and carers were aware of the MyLocalSchool portal, which currently publishes a range of school-level information, although others were not. 16% of survey respondents said they found it difficult to locate relevant information in general, and those who were familiar with MyLocalSchool felt it could be significantly improved. Parents and Carers responded positively to the suggestion of re-designing the portal, for instance including a simple summary dashboard – both quantitative (e.g. attendance) and qualitative (e.g. summary statement from latest

Estyn inspection or an annual wellbeing survey) – with the ability to drill into greater detail as required (e.g. access to full inspection report or survey results).

- 5.51 Thoughts on comparison: During the focus group, we also tested some of the feedback received from schools around their resistance to publishing performance league tables or comparing schools against one another for accountability or improvement purposes. Parents and carers had conflicting views on this issue – some appreciated the potential downsides this could have, while others felt that they would value having access to such comparative information about the school their child attended.
- 5.52 It is interesting to note that, of all the stakeholder groups consulted as part of this project, it was perhaps parents and carers who voiced the greatest desire for more and better quality information about local schools and the school system more broadly. It is difficult to speculate why this was because, relative to other stakeholder groups, our engagement with parents and carers was more limited relative to the size and complexity of the group as a whole.
- 5.53 However, we suggest two possible reasons. Firstly, currently available data may address the data and information needs of parents and carers less well than those of other stakeholder groups, in which case the Welsh Government and other public agencies should prioritise improving their transparency and communication functions in future. However, it might also be that the ethos of the CfW and School improvement guidance has yet to filter through fully to parents and carers in the same way that it has to public agencies (e.g. lessening the narrow focus on narrow indicators of attainment, greater emphasis on school-led self-evaluation). This is perhaps natural given the CfW is still in its relatively early stages and the many other changes to the school systems in recent years as a result of the coronavirus pandemic.
- 5.54 This issue is explored in more detail in Findings section 8 below. Further research with parents and carers on this topic would be valuable following this report.

6. Findings – assessment of areas where changes are needed

Single, combined list of user needs

6.1 Following the mapping of key stakeholder data and information needs, we carried out a further, more detailed analysis to assess whether any change to the current availability and use of data and information is to meet each of the user needs. As Table 5.1 above and the summaries of feedback from different stakeholders demonstrate, there is a high degree of overlap between the data and information needs of these different stakeholders. We therefore combined the user needs for different stakeholders into a single, combined list, with information grouped by common user need rather than by stakeholder. The resulting longlist of user needs is summarised in Table 6.1.

Table 6.1: Longlist of user needs for key stakeholders

Need	Overview	Relevant to
KS4 qualifications outcomes	The arrangements for reporting on KS4 qualifications were paused following the pandemic. Whilst publication of KS4 performance measures had created some negative consequences, stakeholders reported some gaps in their understanding without it.	All
Cross-curriculum development	The CfW prioritises a broad range of cross-curricular skills; schools and other partners need to understand skills development for self-evaluation and improvement purposes.	All
Progress	Another defining characteristic of the CfW is the emphasis placed on learners' progression. Schools and other stakeholders need to understand the progress that learners make throughout education to ensure they are prepared for assessments at Year 11.	All
Wellbeing (learners and staff)	Wellbeing is another key part of CfW (e.g. the fourth purpose, 'healthy, confident individuals') with commitments in the national mission to invest in and improve understanding of learner and staff wellbeing.	All
Learner behaviour and attendance	While most aspects of learner behaviour can be understood by schools through observation and day-to-day processes, stakeholders other than schools require robust, comparable data about key events (attendance, exclusions, pupil moves) for accountability purposes.	Middle-tier, Welsh Government

Characteristics and Equity	Stakeholders need to understand the demographics of the learner population to assess whether the school system is equitable, and to adjust approaches, funding, and analysis accordingly.	All
Schools causing concern	Schools and middle-tier partners needs to be able to identify areas of concern where improvement is necessary, to identify effective responses and monitor progress.	Middle-tier, Schools
Support and improvement services	Local authorities and regional consortia need to be able to review and interrogate the quality and impact of their support services as part of their own self-evaluation and improvement activities.	Local authorities, Regional consortia
Wellbeing of Future Generations Act / Cymraeg 2050 targets	As part of the Wellbeing of Future Generations Act, Local Authorities will set objectives across a range of topics, which schools may need to report on. As part of Cymraeg 2050, schools also need to report on levels of Welsh speaking.	Local authorities, Welsh Government
Communication	The Welsh Government need to be able to communicate the journey and success of CfW reforms to the public and build confidence.	Welsh Government
Attitude to learning	Estyn need to understand and evaluate schools' Wellbeing and Attitude to Learning approaches, as part of their Inspection Framework.	Estyn
Professional learning outcomes	Developing a high quality education profession is one of the four enabling objectives of the <i>National Mission</i> . There are several questions within this, including the attractiveness of the teaching profession, and whether teacher skills match demand.	Welsh Government

6.2 Using this framework, we were then able to assess for each need the extent to which it is being met by data and information currently available (i.e. in academic year 2021/22), and whether some change is necessary. A consistent template was used to appraise each one, concluding with initial hypotheses for any new data or information required. Table 6.2 is an example assessment for learner wellbeing.

Table 6.2: Summary of user needs assessment for learner wellbeing

1. User need summary	<ul style="list-style-type: none"> • Estyn: Learner wellbeing and attitude to learning is a key part of the school inspection framework (accountability) • Local authorities and regional consortia: since learner wellbeing is a key part of the CfW, these organisations need to support schools' approaches to self-evaluation and improvement (self-evaluation of services)
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	<ul style="list-style-type: none"> • Schools: schools need a detailed, up to date understanding of learner wellbeing for the same reason (self-evaluation of services). They also need to communicate issues and how they are supporting learner wellbeing to local school communities (transparency) • Welsh Government: learner wellbeing is a part of the four purposes, so the Welsh Government teams need to understand the impact of reforms/policies on promoting positive wellbeing (self-evaluation of policy) and communicate this to the public (transparency)
<p>2. 'As is' <i>i.e. when the research took place, academic year 2021/22</i></p>	<ul style="list-style-type: none"> • Cardiff University hosts the Schools Health Research Network (SHRN), with over 200 member schools, including all maintained secondary and middle schools in Wales, and carries out a biennial survey of learner health and wellbeing amongst pupils in its member secondary schools. The survey is not mandatory but participation levels are high: more than 90 per cent of secondary schools and 77 percent of pupils within these schools participated in 2019/20. Pilot work is currently being conducted to expand SHRN into primary schools. Participating schools receive a bespoke report with their own data, which includes some comparisons to national trends • Some schools also use a number of surveys (e.g. PASS, HAPN, Anti-bullying survey) as well as their own bespoke surveys and qualitative methods to understand learner wellbeing • Proxies for learner wellbeing are captured in the PLASC (e.g. attendance, exclusions) • Estyn conduct learner, parent, governor, and staff questionnaires as part of inspections, which cover wellbeing in part, as well as learner resilience, physical, and creative skills • Some local authorities would like to compare learner wellbeing across schools in their area, so offer bespoke survey tools to schools. The SHRN also provides local authorities with their own local authority-level report • Regional consortia are broadly satisfied with the understanding of learner wellbeing that they gain from current qualitative data and relationships / ongoing support role with schools
<p>3. Issues and gaps with 'as is'</p>	<ul style="list-style-type: none"> • Some potentially useful data items that are not currently captured in a standardised way were identified as part of the Development of a theory of change and evaluability assessment for the whole school approach to mental health and emotional wellbeing report. They include: Behavioural incidents (including bullying), Referrals to specialist support, Care experience, Disability, and Other health issues • The SHRN wellbeing survey is used by a large number of schools (over 90 percent of secondary schools with expansion into primary schools)

	<p>currently underway). While schools reported that the reports they receive from this survey are valuable, some reported that they are not fully aligned to their specific needs around self-evaluation and communication, and suggested additional questions that would be valuable to include</p> <ul style="list-style-type: none"> • Learner wellbeing can help contextualise other school information, such as attainment and progress. Without some standardised indicators, there's a risk that system partners continue to consider attainment in isolation • Questions over the quality of data on pupil movement and 'off-rolling' at a school level
<p>4. Tensions & questions to explore further</p>	<ul style="list-style-type: none"> • General tension between middle tier organisations and the Welsh Government, who would value a more consistent, detailed understanding of learner wellbeing; and schools, who, while they value wellbeing, feel they have a sound understanding already through their own bespoke approaches, and are somewhat sceptical of the additional time burdens involved administering a mandatory survey or other research tool • Good practice – New Zealand in particular have a mature approach to capturing data on learner wellbeing and using it at different levels of the school system. Are any parts applicable to the Welsh context? • SHRN – how well is this meeting school needs currently? If it (or something like it) became mandatory, would this create any perverse incentives? What outputs would be most valuable to schools and other partners and how should they be used? What additional datapoints could be reasonably added in – whilst ensuring questions remain ethical and appropriate and the survey remains an appropriate length? • Additional burdens – what is the practical time commitment for schools to carry out a whole-school survey, or for a particular year group? What risk of survey fatigue?
<p>5. Hypotheses to test</p>	<p><i>Summary: some standardised data would be welcome by middle tier organisations and the Welsh Government. This is less important for schools, although access to a range of quantitative tools to better understand learner wellbeing would be valuable, as long as the outputs/reports are accessible and provide obvious routes to action. Options to test further:</i></p> <p><i>a. Any potential benefits of either a standardised learner wellbeing survey that is mandated within all secondary schools, with potentially a primary age equivalent; OR the Welsh Government administer periodic wellbeing surveys collected from a sample of schools; OR wellbeing surveys remain optional but with greater Welsh Government encouragement for school uptake</i></p> <p><i>b. Data for wellbeing proxies (e.g. attendance, exclusions) are collected and published more frequently than once a year</i></p>

Deep dive for specific user needs

- 6.3 It is perhaps not surprising that many of the priority needs identified during this research align to aspects of the CfW that are new or different. This section explores the user needs this applies to in greater detail, laying out the specific issues and gaps that stakeholders experience currently and areas where new or different data and information might be most valuable.
- 6.4 It should also be noted that our understanding of and the terminology used to describe the user needs evolved over the course of the project. As can be seen in Table 6.2 above, in the detailed user needs documents that were sent to stakeholders for validation in Phase 2 of our research, there was a single user need called 'Experience, skills, and knowledge.' This captured all aspects of learning related to attainment and progression. As our research and findings advanced, in later phases of research we split these out into distinct user needs. Hence why by Phase 3 of the research, there are separate needs for KS4 qualifications outcomes indicators, cross-curriculum skills development, and progress (see Tables 6.1 and 6.2). We appreciate that in the CfW these are not strictly divisible concepts – attainment should encompass skills, KS4 qualifications, and progression towards these things throughout the education journey. However, it emerged clearly that there is value in assessing them separately during this research project to develop practical solutions to current gaps in data and information, cognisant that this data should ultimately be brought together to understand them holistically.

KS4 qualifications outcomes data: assessment of former approaches

- 6.5 The reviews of qualifications that learners sit in year 11 themselves are not in scope of this research project. However, arrangements for collecting, processing, sharing, and using qualifications outcomes data are in scope. They have historically been of great importance within the data and information ecosystem.
- 6.6 The Welsh Government stopped publishing KS4 qualifications outcomes indicators during academic year 2019/20 due to the pandemic and at the time of writing are considering whether and how to re-introduce them. In our research, we therefore asked people about their experience of the indicators and approaches to reporting on KS4 attainment used prior to coronavirus in order to inform options for any

changes in future. As well as direct engagement with stakeholders on this topic, we also received detailed briefings from Estyn and relevant Welsh Government policy teams summarising their experience of KS4 qualifications indicators. The main types of indicators used and feedback on them is summarised in Table 6.3.

Table 6.3: summary of feedback on indicators formerly used to summarise KS4 qualifications outcomes

Indicator type	Summary of feedback	Implication
Rankings / summative judgements <i>e.g. league tables, colour codes</i>	<ul style="list-style-type: none"> Place too much judgement and importance on narrow, imperfect indicators, that do not account for context 	Avoid use at all times.
Points based measures <i>e.g. Capped 9 points score</i>	<ul style="list-style-type: none"> Take account of all learners and all qualifications a learner sits, but distills too much complexity into a single headline indicator Not obvious to schools and the public how they are calculated and hard to interpret 	Avoid use in future; or only alongside other indicators.
Threshold measures <i>e.g. Level 2 inclusive threshold</i>	<ul style="list-style-type: none"> Some positive feedback on former iterations of threshold indicators (e.g. L1, 5A*/A) But L2/L2+ reported to have driven significant negative consequences (e.g. subject selection, off-rolling, too much focus on learners on grade boundaries) Feedback from schools was less negative than from Welsh Government about these indicators. Estyn recognised the value and positive impact of some of these indicators but recognised that others had driven negative behaviours 	Potential to use for self-evaluation and other functions in future, though with some adaptations to mitigate former unintended consequences.
Value added measures <i>e.g. FFT value added</i>	<ul style="list-style-type: none"> Positive feedback that these indicators focus on progress rather than summative attainment only. This corresponds to research findings from England However, in Wales there is no reliable / consistent baseline from which to measure progress (i.e. with the removal of KS2/3 assessments) 	Could be beneficial in theory, but would entail significant changes to assessment
Post-16 consistent measures	<ul style="list-style-type: none"> Uses a basket of three complementary indicators for Post-16 qualifications: value added (FFT), achievement, and destinations (using the Longitudinal Employment Outcomes dataset) Used prior to coronavirus and seen as positive as the importance of any single indicators is balanced by the other two 	Potential model for KS4 approach

6.7 Other relevant insights from research on KS4 qualifications outcomes indicators include:

- arrangements since coronavirus – schools and middle tier organisations reflected positively on the discontinuation of performance measures such as Capped 9
- gaps in information – some stakeholders however reported gaps in their visibility of learner attainment since AWCDs has been paused, in particular local authorities. However, Estyn and regional consortia reported that this has not significantly impaired their ability to carry out accountability and school support functions
- school capabilities – some schools reported that their in-house analytical capabilities have increased over recent years to the extent that they can create their own learner attainment information for KS4, and often much earlier than AWCDs reports were typically released. A range of third-party software is also available to facilitate this. However, this might apply only to larger and/or secondary schools. Anecdotally, smaller schools do not have the same capacity and capabilities, so would appreciate the ‘backstop’ of quality assured information provided by the Welsh Government in the AWCDs reports
- usefulness for schools – various stakeholders highlighted that aspects of the AWCDs reports were not aligned to the self-evaluation and improvement needs of schools (e.g. too much information, graphics hard to interpret, comparisons to other schools not helpful).⁹

6.8 Options for changes to current/former approaches to reporting on KS4 attainment (suggested by a combination of Estyn, schools, and Welsh Government teams) included:

- subjects – results could be reported at a qualification / subject level to emphasise the value of each subject, as opposed to, for example, the L2+ threshold measure, which potentially overvalues literacy and numeracy qualifications
- presentation of statistics – the way indicators are presented to schools and middle tier organisations could be adapted in future to lessen the extent to which indicators are seen as definitive judgements of performance, for example by including confidence intervals

⁹ Welsh Government stakeholders also raised questions about the system used to assign points to different exam result grades, including that it is out of date. While this system was not explored in detail in this report, Qualifications Wales and relevant Welsh Government policy teams suggested that this system must be both reviewed and then actively managed and resourced appropriately to ensure that any future threshold measures or other indicators can avoid the challenges highlighted in this section.

- comparisons – schools value comparisons between themselves and other schools as long as they are meaningful and not taken out of context. For example, the former practice of ranking schools within a school family into quartiles often drove competition rather than collaboration between schools. Estyn feel that comparisons to residuals (i.e. expected results based on school population), which have been used in the past, are most valuable. Comparing outcomes results with previous years was also seen as less valid / useful due to the impact of coronavirus and grade inflation than comparisons between schools within each year.

Cross-curriculum skills development

- 6.9 There is much greater focus on skills development in the CfW than previously. These include the three mandatory [cross curricular skills](#) of literacy, numeracy and digital competence, and the four skills integral to the four purposes: creativity and innovation, critical thinking and problem-solving, personal effectiveness, and planning and organising. There was a general consensus that there are currently gaps in stakeholders' ability to understand how and whether learners are developing these skills and that additional data and information would be valuable to do this, whether at an individual learner level (e.g. flexible assessment methods and observations by teachers), a population level (e.g. standardised assessment and data collection), or both. The added advantage of creating this data is that it would help balance out the former disproportionate focus on KS4 qualifications outcomes as the way of understanding learner attainment and achievement.
- 6.10 A key consideration for developing solutions to address this gap in information is measurability – some of skills listed above are currently easier to assess than others. For example, of the three mandatory cross-curricular skills, only literacy and numeracy are currently assessed in a standardised way. It is unclear whether this is because they are considered more important than digital literacy, or because digital literacy is harder to measure.

Progress

- 6.11 Initial rounds of stakeholder engagement identified concerns that aspects of the CfW relating to progression are not understood consistently, which presents a risk when learners come to sit KS4 examinations. Although under the CfW schools develop and teach their own curricula, learners take the same examinations at KS4,

so if progression is understood differently across schools, this may lead to variations in the effectiveness of teaching and learning and corresponding variations in KS4 attainment.¹⁰

- 6.12 As described in Findings section 5 above, some stakeholders consulted were in favour of addressing this problem by introducing some form of quantitative assessment framework to track learner progress over time. We therefore explored with people what such a framework could be linked to in the curriculum. Suggestions ranged from, at the highest level, the 27 Statements of What Matters, through to the Principles of Progression and Descriptions of Learning, and at the most detailed level the Progression Steps. However, Welsh Government policy teams we consulted on this topic signalled clearly that introducing granular, quantitative assessment frameworks to track learner progress through education was contrary to the ethos of the CfW, which focuses on learner 'stage not age'. The Progression Steps also exist to help schools design their own curricula rather than as any specific age-related expectations of attainment or understanding. Finally and from a practical perspective, any framework would also be very challenging and time consuming to design and administer. This view was echoed by several other stakeholders.
- 6.13 The solution to this issue therefore appears to reside in practice changes and/or improved guidance and peer-support, rather than standardised data and information. Indeed, a range of Welsh Government guidance and directives were issued while this report was being drafted to address the issue.¹¹

Behaviour and attitudes to learning

- 6.14 Schools, local authorities, regional consortia, and Estyn all identified a need to understand learner behaviour and attitudes to learning, and incidents such as exclusions. This is both for self-evaluation purposes, and for accountability, as incidents such as exclusions might indicate risks to learner equity and inclusion. In addition to qualitative information from ongoing conversations and engagement between organisations, proxy indicators captured through standardised data

¹⁰ This challenge has been experienced by other countries that have implemented similar education reforms to Wales. Their responses to this challenge are discussed in detail in the next section.

¹¹ For example in the [Supporting materials for curriculum, assessment and evaluating learner progress](#), which includes guidance on [developing a shared understanding of progression](#) specifically. A [Ministerial Direction](#) provides additional guidance on developing a shared understanding of progression both within a school and across schools

collection such as attendance, exclusions, behavioural incidents, and pupil movement are also important.

- 6.15 However, we heard from a number of research participants – including all three head teachers that provided written feedback on our detailed user needs documents – that they do not have full confidence in some of these indicators. This is partly due to differences between school policies and practices relating to aspects of behaviour (e.g. some schools have the option to move learners at risk of permanent exclusion temporarily to a resource base), and therefore how they are recorded in management information and statutory returns (e.g. PLASC). However, we heard anecdotally that these differences may mean that certain behavioural events that would usually attract scrutiny from middle tier organisations (e.g. exclusions, pupil moves) are under-reported in some schools relative to others. For example, some schools register learner attendance before rather than after lunch; others define exclusions according to their individual school policy, which may not align to Welsh Government data definitions. This erodes the usefulness of outputs and indicators for both self-evaluation and accountability purposes.
- 6.16 Behaviour and attendance is perhaps therefore an instructive case study for how school concerns over attracting scrutiny and accountability processes impact on approaches to recording and using data for self-evaluation. The accuracy and quality of behaviour and attendance data might be a useful bellwether for the school system's progress in creating a culture of using data and information for self-evaluation and improvement in future.

7. Findings – approaches to using data and information in other countries

7.1 This section summarises the most important findings from the international exemplar review. We looked at approaches to using data and information in countries that have undergone similar educational reforms to Wales or that are experienced in practices that were relevant to our emerging recommendations (e.g. sampling). Findings are organised by country.

Finland – wellbeing, progression, sampling

7.2 Wellbeing: Learner wellbeing in Finland is assessed annually by nurses that are embedded in schools (Coburn 2019). Additionally, there are three different studies carried out nationally on learner wellbeing. The surveys are available in five languages and run by schools, who are asked to set one lesson period aside for learners to complete the surveys. These surveys collect a range of data including: levels of life satisfaction, experience of bullying and physical threat, substance abuse, and the learner's experience of personal wellbeing and health (Helakorpi and Kivimäki 2021). Data gathered in Finland's data and information ecosystem including these surveys is primarily used by schools for self-evaluation purposes with little central government involvement.

7.3 Attainment and progress: Finland makes limited use of standardised assessments, and has instead a strong focus on individual learner level progress. Learning outcomes are monitored by schools but no regular external inspections of schools or teachers take place as there is a 'culture of trust' across the system. Standardised studies of progression in Finland are generally longitudinal studies commissioned or run by municipalities, collected on a sampled basis (Vainikainen 2014). The only standardised summative assessment that learners take is at the end of secondary education (age 16). However, the scoring for this test is relatively subjective and up to teachers to interpret (Vainikainen et al. 2018). Teachers receive direct information on their students' overall competence with some comparisons between schools created and published by the national government (Vainikainen et al. 2018). While the subjective, individual focused, trust-based approach outlined above is well established within Finland's education system, there are arguments put forward that the current level of flexibility of interpretation of

what is required to achieve different grade levels is too high. No changes to address this have gone forward yet.¹²

- 7.4 Sampling: Standardised learning outcomes are evaluated via sampling in assessment activities led by the national government so that they can be extrapolated to apply to the entire age group in pre-primary and basic education (Vainikainen et al. 2018). Approximately 5–10% of pupils of a particular age group being evaluated will participate (Finnish Education Evaluation Centre 2014). Samples are drawn from within schools and there is active effort to get accurate geographical coverage (Vainikainen et al. 2018). Two or three subjects are usually assessed in any one study, with around 5,000 pupils participating per assessment (Vainikainen 2014). The schools included in the national sample receive information about the assessment ahead of time, with the questions and tools also made available to other schools not included in the sample for use on an optional basis (Finnish education Evaluation Centre 2021). The sample-based assessment was developed gradually over 20 years of testing until the Framework for Evaluating Educational Outcomes in Finland was published in 1998 (Finnish education Evaluation Centre 2022). The school year cohorts and subjects to be assessed are defined in Finland's 4-year educational assessment plan set by the Finnish Education Evaluation Centre (Vainikainen et al. 2018).
- 7.5 *Learning for the Welsh system:* Finland has seen success in creating a data and information ecosystem geared towards locally-driven self-evaluation through frequent, focused sampling of specific subjects to assess performance combined with locally-led longitudinal studies to understand progression within the system. Its sampling approach – limited representative cuts of the population with adaptable sampling practices for different aspects of the school system – is also seen to be effective. Finally, the assessments of aspects of learning like wellbeing, progression, or attainment, are led to a large extent by and the results used primarily for self-evaluation and allocating regional-level support.

¹² 'No national testing is currently planned to see how schools meet the demands of the new Core Curriculum, but it is clear that even a relatively well-functioning system would benefit from a slightly more systematic approach to standards to secure the equity of grades that pupils need to apply for upper secondary education' (Vainikainen et al. 2018).

- 7.6 Learner wellbeing: New Zealand approaches data capture around learner wellbeing through a series of surveys of learners, teachers, and the wider school. Learners are subject to three groups of surveys: the What about Me Survey, which is run by Malatest International as commissioned by the Ministry of Social Development with the goal of getting a nation-wide picture through an opt-in survey available to children and young people; the Wellbeing@School survey, which is run and partially designed by schools using tools provided by the national government and focused on informing self-evaluation and understanding local school communities; and the Me and My School Survey (an attitudinal survey) (d. NZCER 2022).
- 7.7 Schools use the Wellbeing@School (W@S) tools to capture student and teachers' views about different aspects of school life, and to inform appropriate responses to any issues raised. The data from the W@S survey is accessible to the New Zealand Council for Educational Research for analysis. They carry out national level analyses including comparative data work looking into topics like: what practices are seen in schools with lower levels of student aggressive behaviour; and how wellbeing varies between schools or within schools (Lawes and Boyd 2018). Crucially, central government does not have access to the raw data from these surveys and must rely on asking the research partner to look into specific questions they want answered (b. NZCER 2022). This is intended to increase school trust in the surveys by ensuring they cannot be scrutinised directly on the basis of their responses.
- 7.8 Co-design approach: New Zealand's approach to designing data collection and assessment tools is characterised by collaborating with system partners (Education Review Office 2016). The wellbeing surveys described above, and other assessment tools for use by schools, are modular i.e. some questions are mandatory but schools can mix and match others from a pre-set list themselves. This enables schools to gather information that's relevant to them while at the same generating a baseline of consistent, comparable information.
- 7.9 *Learning for Welsh system:* wellbeing is prioritised in the New Zealand education system, and this is reflected amply in their data and information ecosystem. Understanding wellbeing is school-led, and the data generated through a variety of survey tools is used regularly for self-evaluation purposes. This enables schools to respond quickly and in an informed way to problems facing their communities

(Education Review Office 2022). There is a significant amount of guidance provided to schools around using the W@S survey, covering everything from good survey design, to analysing and acting upon the results (c. NZCER 2022).

Singapore – transparency and communication

7.10 While Singapore's education system is perhaps more akin to Wales's former curriculum than the new CfW, it has been on a reform journey over recent years that is similar to Wales's with regards to addressing learner wellbeing needs and reducing the number of high-stake standardised assessments. Since 2018 Singapore has tried to move away from understanding progression exclusively through the lens of academic attainment by reducing the number of school-based assessments and changing the approach for those that remain (Ng 2020). For example, two national high-stakes assessments for primary age pupils have been discontinued, and in summative assessments pupils are 'marked...against set criteria rather than in comparison to other students' (Ng 2020). However, the education system has experienced challenges throughout this transition, namely the public's ingrained emphasis on grades as a measure of pupil success and progression. For example, with the reduction in the number of exams, many parents and carers have begun using private tuition agencies to assess their children, using former assessment frameworks, to gauge their progress against their peers (Mokhtar, 2019 in: Ng 2020).

7.11 *Learning for Welsh system:* Singapore's experience provides a good example of the need to manage public attitudes and expectations when implementing education reforms, including the use and publication of attainment indicators. If the number of assessments reduces, or at least the extent to which outcomes data is published, parents and carers will need to be given confidence that their children are learning what they need to and will not be put at a disadvantaged in the future.

Spain – bilingual / plurilingual systems

7.12 The education system in Spain is decentralised with autonomous regional governments holding decision making power over the education system, with some limited powers devolved to schools themselves (OECD 2018). The Spanish system has two national, summative standardised assessments at the end of school phases, which are both offered in regional languages (OECD 2018). For example, in Catalonia 97 percent of students chose to do the entry to university exam in

Catalan in 2022 (Vallespín 2022). We infer therefore that data collection must happen in all the co-official languages to allow for pupil choice.

- 7.13 The principle underpinning language choice in the education system in Spain is to have a bias towards what is considered the socially underrepresented language, i.e. the language that is used less in day-to-day society is prioritised in teaching spaces (Generalitat of Catalonia Ministry of Education 2018, Gorter and Cenoz 2011). Both Catalonia and the Basque Country control for language in their sampled assessment activities of learner attainment, looking at learner's mother tongue, and proficiency in co-official languages as well as their performance in other areas like numeracy to compare to monolingual learners. Basque students are evaluated against an ideal monolingual speaker of Spanish and an ideal monolingual speaker of Basque (Gorter and Cenoz 2011). Since 2009, the Basque Country has assessed the acquisition of the key objectives within their curriculum once a year in all the pupils in the fourth year of primary education and the second year of compulsory secondary education (Gorter and Cenoz 2011). Both in Catalonia and the Basque Country a lot of comparison of grade attainment between different groups of language speakers is carried out.
- 7.14 *Learning for Welsh system:* Data collection including for assessments could be available in all co-official languages to allow for pupils to take public examinations in the language with which they are most comfortable.

8. Findings – other insights and conclusions from testing draft recommendations

Areas where changes or improvements are necessary

- 8.1 Based on our detailed assessment of the longlist of user needs, we conclude that many stakeholder needs are met by the data and information currently available within the system. However, there are several areas where some change is required to meet the needs of stakeholders, summarised in Table 8.1 below.
- 8.2 Our recommendations for the specific change required for each of these user needs appears in the Recommendation section below. Note our recommendations below do not align in every case exactly with the categories of need in the table. For example, we have created separate recommendations to cover learner and staff wellbeing, and communication is a consideration for each of the recommendations (i.e. how schools communicate wellbeing information with schools communities) as well as by itself).

Table 8.1: summary of requirement for specific changes to current use of data and information to meet stakeholder needs

Need	Assessment
KS4 qualifications outcomes	Change required
Experience, knowledge, and skills	Change required
Progress	Change required
Wellbeing (learners and staff)	Change required
Learner behaviour and attendance	Change required
Characteristics and Equity	Change required
Schools causing concern	No change required
Support and improvement services	No change required
Wellbeing of Future Generations Act / Cymraeg 2050 targets	No change required
Communication	<i>Considered as part of other changes</i>
Attitude to learning	No change required
Professional learning outcomes	No change required

Themes and insights from testing recommendations

- 8.3 One of the most important phases of our research was draft recommendation testing. It was often the case that when presented with concrete, tangible proposals,

stakeholders could really engage in the practical implications and nuances of the pros and cons of different approaches to using data and information.

- 8.4 Since we employed a needs-led approach throughout the project, feedback was broadly positive about the key current challenges and issues we had identified as being most important, and the corresponding high level recommendations. Though testing draft versions with people of course enabled us to make the final versions more practical, nuanced, and aligned to needs.
- 8.5 However, testing did highlight tensions between the needs of different stakeholders (e.g. one stakeholder requesting new data that would involve an additional burden on schools from increased data collection) and indeed, in some instances, between core functions of the ecosystem (e.g. between self-evaluation and accountability). It was also highly instructive about the real extent to which culture and attitudes to using data and information can differ within different partners and the extent to which recent School improvement guidance is recognised and embedded in practice. The main themes and insights are as follows.

Broad consensus on the 'right' approach to using data and information amongst key stakeholder leadership

- 8.6 Key stakeholders we engaged with throughout the project typically provided considered, balanced, nuanced feedback. There was an appreciation at all levels of both the potential value of using quantitative data to drive improvement, accountability, and transparency, but also of the inherent risks involved with publishing indicators and using them to inform decision-making. Participants were acutely aware of the challenges created by some former approaches to using data and information and wanted to avoid them in future. They were also aware of and bought into the spirit of the recent School improvement guidance.
- 8.7 As a result, there were relatively few instances in which a particular stakeholder or group cited a strong need for new or additional standardised data without appreciating the possible negative or unintended impacts it could have on other parts of the system. For instance, Estyn, local authorities, and the Welsh Government teams all reported that some form of regular, quantitative information about learner wellbeing would be valuable for carrying out their respective functions. But they all also recognised the potential new burden this would introduce for schools, and considered whether some alternative would achieve the same goal. As

a result, there were therefore generally fewer strong calls for additional standardised data than was perhaps anticipated at the outset of the study.

Wider culture and attitudes towards data and information

- 8.8 While the paragraphs above outlined above would suggest that the reforms have already have a significant impact on the culture and attitudes, testing of recommendations painted a slightly different picture. When presented with concrete proposals for things that might change in the ecosystem, stakeholders we had engaged with previously were able to anticipate and think through potential practical implications and challenges in greater depth than previously. The webinar sessions, open to all schools, also enabled a wider range of stakeholders to input.
- 8.9 To summarise briefly, this feedback suggested that the School improvement guidance has perhaps not filtered out through practitioners in the system (at all levels) as much as we had initially thought. Similarly, attitudes towards using data and information appear to still be quite mixed; many people are bought into the new School improvement guidance, but there is a suspicion that many others are still operating under previous paradigms. Specific insights include:
- schools and other stakeholders were not confident that, if more school-level standardised data were available within the system (e.g. learner skills development, wellbeing), it would not be used by some practitioners in middle tier organisations for scrutiny and accountability purposes rather than self-evaluation and improvement¹³
 - while the CfW and School improvement guidance do not encourage schools to engage in exhaustive, quantitative assessment of learner progress aligned to aspects of the curriculum like Progression Steps, there is a proliferation of third-party software that have created such frameworks. Many schools use these systems, and other more traditional, data-driven approaches to performance management, either because they feel this is expected of them by other partners in the system or because this is what school leadership and governors are used to from the former curriculum
 - schools have been under significant pressure over recent years, dealing with and recovering from the pandemic and implementing the new CfW. Anecdotally,

¹³ It is important to note that this kind of behaviour and practice is not an inevitable impact of using / sharing more data, but is within the direct control of the Welsh Government and middle tier organisations.

some head teachers have therefore not even seen the new School improvement guidance yet, never mind having internalised it and started training staff and governors accordingly etc.

- 8.10 These points have potentially significant implications for the kinds of changes that the Welsh Government can make to the data and information ecosystem while still also advancing the principles of the School improvement guidance. It also has implications for the approach to implementing any changes.

The public and media

- 8.11 The one stakeholder group that called for significantly more access to data, both qualitative and quantitative, were parents and carers. Parents and carers were also more sanguine than 'key' education stakeholders about qualification results data being published in a way that enables comparisons between and rankings of individual schools.
- 8.12 This could indicate that their needs for data and information were not being met as fully as other stakeholders, both under the previous curriculum and now. One of our detailed recommendations below addresses this. However, it could also indicate that an understanding of or buy-in for some aspects of the CfW and new School improvement guidance has not yet filtered out into the general public to the extent that is has for key stakeholders. Indeed, other countries that have implemented similar education reforms have experienced a similar issue (e.g. see Finland in the international exemplar review, Findings section 7 above). The Welsh Government should explore this in more detail following this report. It potentially illustrates the importance of continued public communication about the vision of the new CfW for creating an effective data and information ecosystem.
- 8.13 The role of the media also featured prominently during recommendation testing. One of our recommendations below proposes that the Welsh Government no longer publishes school-level results of KS4 qualification outcomes. The rationale for this is to help create a culture of using data and information first and foremost for self-evaluation and improvement, as per the recent School improvement guidance (discussed in greater detail below). However, even if Welsh Government were to implement this recommendation, several stakeholders noted that media organisations are likely to submit Freedom of Information requests to access

school-level results (and/or collate this information from other sources) and create their own leagues tables.

- 8.14 Welsh Government should therefore take steps to prepare for this, such as drafting prepared statements in the event that media outlets create school league tables. These would attempt to change the media narrative around education and academic attainment consistent with the CfW and the corresponding proposals for the data and information ecosystem laid out in this report. For instance, they might emphasise: the expanded vision of the CfW and the new approaches to using data and information that Welsh Government is trying to encourage, and why; aspects of learning that are now of equal importance to KS4 qualifications like wellbeing and skills; and the relationship between KS4 qualifications outcomes and socio-economic factors such as income and social capital, which are broadly outside the control of individual schools.

Areas where we have not made recommendations

- 8.15 Finally, there were some challenges or gaps in current information that emerged from our research of user needs for which we ultimately did not make specific recommendations, but which we feel are sufficiently important for the Welsh Government to note. There are two reasons for this:
- an issue or challenge was highlighted during research that is strictly outside the scope of this project, but which has an impact on data and information, which the Welsh Government should consider separately (Behaviour and attendance)
 - additional standardised data is required to meet a need highlighted during research, but this data is probably not sufficiently valuable to justify the additional burden on schools of collecting it (learner voice in Post-16 destinations).

Behaviour and attendance¹⁴

- 8.16 We heard during stakeholder engagement that there were inconsistencies in how schools measured attendance, exclusions and pupil movement, which may be impacting on the quality and consistency of indicators for these events. We initially developed a draft recommendation aimed at tightening guidance for data definitions to make recording and reporting more consistent. However, testing of the draft recommendation revealed that guidance is in fact appropriate, and the bigger issue

¹⁴ Additional information for these two areas is provided in Annex E.

is perhaps the close scrutiny that behavioural events such as exclusions have attracted in the past, which created perverse incentives for schools to present their data in a more positive light. This further evidences that stakeholders – particularly those with accountability functions – must be bought into the ethos of self-evaluation and improvement to meet the vision of the Curriculum for Wales.

Learner voice in Post-16 destinations

- 8.17 Schools, further education settings, and employers were consistent in calling for greater emphasis on destinations in the way that secondary settings think about learner achievement. The latter two groups in particular also felt that capturing some element of learners' own voices in destinations would be valuable, for instance whether they went onto their preferred destination in Post-16 education.
- 8.18 We therefore developed a draft recommendation for a destination voice survey that could be carried out by learners in their first year of Post-16 education, asking whether they went onto and remained in (e.g. for at least 6 months) their preferred destination, collected potentially on a sampled basis. The intention was to help both secondary and Post-16 settings provide learners with better advice and guidance while at school, to ensure more learners went to and sustained their preferred destination.¹⁵
- 8.19 However, on testing this recommendation, partners raised questions over the reliability of the outputs of such a survey. For example, if it found that a proportion of learners were dissatisfied with their destination, this could indicate that they were pushed towards a destination that was not suitable for them or that there was a lack of their preferred Post-16 provision in their area. But it could also simply be because learners changed their minds. Perhaps more importantly, though, and even if careful survey design mitigated this challenge, there were questions over whether the value of the data such a survey would generate would justify the additional burden on Post-16 settings of administering it. An alternative recommendation was therefore developed to address this issue, making use of data that is already collected in the system (see recommendation 11 below).

¹⁵ At present, Welsh Government statistics record the proportion of learners that enter different kinds of Post-16 settings and destinations, but not whether this reflects what learners themselves wanted.

9. Recommendations

- 9.1 This section outlines our recommendations. Some suggest substantial shifts in the fundamental approaches to underpin the use of data and information in the future, providing some ambitious general principles. Others propose changes in specific areas to underpin the use of data and information in the future.
- 9.2 These respond to the priority stakeholder needs identified through this extensive research, but we recognise that each of them is a large undertaking to both develop and administer. It is evident that schools and other partners have particularly limited capacity for large-scale changes currently; the Welsh Government along with partners will need to carefully consider which recommendations to take forward, their potential implementation, and any necessary phasing in over time, in aspiring to build an information ecosystem that balances the needs and tensions across the school system.

Process for developing recommendations

- 9.3 At the end of Phase 3 of our research we had a strong understanding of the core functions for which standardised data and information is required at all levels, and areas where some change is required to meet stakeholder needs.
- 9.4 Research activities had also generated a range of new insights into: stakeholders' views on the strengths and shortcomings of historic (i.e. pre-coronavirus) and current approaches to using data and information within the school system; relevant practice and approaches from other countries; and important principles that can enable the new ecosystem to support and complement the new curriculum.
- 9.5 We brought these three things together to develop recommendations that respond to stakeholder needs as they are now but also define the ecosystem in general terms and will enable it to evolve over time. In practice, this meant considering our detailed assessments of user needs and findings of the international exemplar review alongside a set of important criteria which needed to be met to ensure recommendations are appropriate, practical, and aligned to the vision of the CfW. Based on this, we developed initial hypotheses and tested and refined them iteratively with partners to arrive at these final versions.

Criteria that underpin recommendation development

9.6 We used a set of criteria to help shape recommendations. Some of these applied to developing each specific recommendation, some to the recommendations collectively, and some for both. This ensured we took a systemic view rather than developing atomised, disconnected recommendations that do not work as a whole. For example, we initially developed more specific recommendations than are included in this final version of the report. When these were considered collectively, it was felt that it would mean introducing too many additional burdens on schools. Some of the specific recommendations were modified or removed as a result. Taking this collective view also meant we could develop single recommendations to meet several user needs with just one change to data and information.

9.7 Criteria that apply to specific recommendation development:

- balancing competing stakeholder needs – for any specific instance of data collection, processing, and use, the needs of one stakeholder group should not be prioritised above others. For example, in general schools should not be required to collect significant new data – incurring a time and resource burden – to provide the Welsh Government with data that it needs for its own self-evaluation and improvement alone. If additional data is required to meet the needs of one stakeholder, the data journey should be designed so that it also creates information that is valuable for other stakeholders; or better yet, the same data journey should be designed to meet multiple stakeholders needs
- good practice principles – single indicators of aspects of learning at an individual learner or school-level should not be ascribed too much importance. They should be used in combination with other quantitative indicators and a range of qualitative information to develop a rounded picture. They should also always be interpreted alongside appropriate contextual information, or, where this is not available, treated with appropriate caution.

9.8 Criteria that apply across all recommendations:

- parity between curriculum and ecosystem – it is an unfortunate truism that the things that are measured in a system are naturally prioritised by stakeholders. For this reason, as far as is possible and practical, the school data and information ecosystem (i.e. the things that are measured and reported on) should reflect the aspects of learning that are considered important within the CfW.

9.9 Criteria that apply to both specific recommendations and collectively:

- minimise burdens – schools are currently experiencing great pressures with the recovery from Coronavirus and implementation of the CfW. Any additional burdens from increased data collection (for all purposes) should therefore be minimised as much as possible and/or consideration given to making better use of what data is collected already (e.g. for schools own operational purposes). It should be noted that there are situations in which this criterion may come into conflict with the principles of parity above
- promote a culture of self-evaluation and improvement – all the key stakeholders we engaged with supported the ethos of the recent School improvement guidance, which emphasises that data and information should be used primarily for self-evaluation and improvement. However, we also found that this message may not yet have filtered through to all practitioners in all parts of the system, leading to concerns that both current and any new school-level data shared with other partners (e.g. middle tier organisations) might still be used for scrutiny and accountability purposes. Recommendations for the practical use of data and information should therefore be used to promote the wider culture of self-evaluation and improvement that the Welsh Government is trying to instil
- holistic understanding – the data and information ecosystem should also reflect the breadth of learner experience. As much as is possible, indicators for both specific aspects of learning, and within the ecosystem overall, should aim to provide an understanding of learner distance travelled as opposed to point in time only, and for the duration of learning, not just the end point.

Recommendations – overview

- 9.10 There are four categories of recommendations. These are summarised in Table 9.1 and discussed in greater detail below.
- 9.11 Some suggest substantial shifts in the fundamental approaches to underpin the use of data and information in the future, providing some ambitious general principles. Others propose changes in specific areas to underpin the use of data and information in the future.
- 9.12 These respond to the priority stakeholder needs identified through this extensive research, but we recognise that each of them is a large undertaking to both develop and administer. It is evident that schools and other partners have particularly limited

capacity for large-scale changes currently; the Welsh Government along with partners will need to carefully consider each recommendation and its potential implementation, and any necessary phasing in over time, in aspiring to build an information ecosystem that balances the needs and tensions across the school system.

Table 9.1: Summary of all recommendations

General principles
<p>1. Types of indicators</p> <p>The Welsh Government should seek to avoid using indicators of individual school performance that rank schools or imply value judgments. Generally, the Welsh Government should use caution when devising and publishing any indicators that summarise complex information, and co-design them with the relevant stakeholder whose data is being summarised.</p>
<p>2. Approach to sharing school-level data</p> <p>The Welsh Government should continue to drive the culture of using data for self-evaluation and improvement by refraining from publishing school-level indicators. The Welsh Government should consider sharing the school-level data and indicators it collects and processes with respective schools only (e.g. KS4 qualification outcomes), and in the near term, schools should have discretion over sharing this information with middle tier organisations and school communities.</p>
<p>3. Using sampling to answer policy questions</p> <p>The Welsh Government should aim to employ sampling when seeking to answer policy self-evaluation questions to minimise the burden on schools of additional data collection. It should aim to distribute the burden of participating in sampled activities as evenly as possible amongst schools and make all research tools used available for other schools' optional use.</p>
<p>4. Transparency and communication with the public</p> <p>All system stakeholders should re-commit to the principle of transparency with the public, but in particular the Welsh Government and in the long term, schools. In the near term, schools should have some discretion over the scope and format of information shared with school communities (e.g. via MyLocalSchool), in line with general principal 2 above.</p>
Specific changes
<p>5. Understanding key learner skills</p> <p>The Welsh Government should lead work to create learner assessments to capture a broader range of skills than numeracy and literacy for learners before KS4. Assessments could be conducted on a sampled basis as per general recommendation 2, with participating schools receiving their own results for self-evaluation purposes. Further research should be carried out to determine what skills to assess and how.</p>
<p>6. Supporting consistent approaches to learner progression</p> <p>The Welsh Government should consider commissioning further research to understand how to best support consistent approaches to learner progression across schools. The preferred option is that the middle tier deliver support to schools to develop consistent approaches to understanding and benchmarking progress – and not the introduction of a consistent measure or indicator.</p>

7. Learner wellbeing and voice

The Welsh Government should continue to develop its approach to learner wellbeing surveys and explore whether and how learner wellbeing data might be generated annually, at levels that are both representative at the national level and are useful for schools. Sampling may help to achieve this and should be considered. The Welsh Government should also continue to encourage participation and develop awareness of existing Welsh Government endorsed surveys. It should also create guidance to support schools to implement an optional annual Learner Voice Survey and encourage its uptake, to complement the national picture with locally relevant themes.

8. Staff wellbeing

The Welsh Government should introduce a system for collecting consistent, national level data on the impact of the reforms on staff wellbeing, which could be a new module within the School Workforce Annual Census or a separate staff wellbeing survey.

9. Contextualising school indicators and ability to interrogate equity impacts

The Welsh Government should consider using the Welsh Index of Multiple Deprivation to provide more nuanced contextual information about individual schools and include this in any reports shared with schools and on MyLocalSchool. It should also consider collecting additional learner-level characteristics in the PLASC to enable more granular analysis of curriculum equity impacts. This recommendation should inform the current Welsh Government review into how to best understand school-level deprivation.

10. Greater transparency with school communities

The Welsh Government should conduct or commission a needs-led review of the MyLocalSchool system so that a broader range of school-level information is available to school communities in the long term, in line with the general principles 2 and 4, and recommendation 12. Including functionality for schools to upload their own information should be considered.

Key Stage 4 qualifications outcomes data

11. Revise KS4 indicators and data sharing

The Welsh Government should aim to create a basket of useful indicators for schools to understand their KS4 qualifications outcomes in a rounded, contextual way, for self-evaluation purposes. The Post-16 approach (i.e. consistent measures) is a useful guide. Indicators might include indicator(s) to summarise qualification outcomes, a destinations indicator(s), and qualification/subject level summary statistics. Reports provided to schools should be designed with them and include more detailed contextual information and comparisons they find most valuable for self-evaluation and learning purposes.

Continuing to evolve the ecosystem

12. Roadmap for building a culture of self-evaluation and improvement

The Welsh Government should phase in any changes to the data and information ecosystem resulting from this report (or otherwise) gradually. Indeed, it could potentially consider pausing any changes (incl. issuing new guidance around the use of data and information for a period) and instead focus on influencing the broader system culture by reinforcing current School improvement guidance to ensure it filters through to all levels.

13. Approach to ongoing review and development of the ecosystem

The Welsh Government should conduct a short, annual review of the data and information ecosystem to identify and respond to any specific issues or gaps that may emerge, as well as to understand how the culture relating to the use of data and information is developing.

Detailed recommendations

- 9.13 This section describes recommendations in greater detail. As noted above, some recommend substantial shifts and provide some ambitious general principles, whereas others propose central changes in specific areas. We are conscious that these recommendations will likely be large undertakings to develop and administer – and each should be considered carefully, with the capacity for schools and other partners to manage these large scale changes a key consideration.
- 9.14
- 9.15 It is worthwhile noting here again that making effective use of data and information in a system as complex as education in Wales will always be an exercise in balancing potentially competing user needs and functions, in advancement of an underlying vision. In this case, these are the twin goals of successful implementation of the CfW and putting in place the culture and practices around using data and information set out in the [School improvement guidance](#). Some stakeholder group's individual needs may therefore not be met fully by the recommendations below because they have been balanced against those of other stakeholders.
- 9.16 The recommendations also do not cover every aspect of the data and information ecosystem. The specific recommendations in particular respond to those needs that emerged from our various engagement as priorities at the time of writing. This is not to say that the Welsh Government and other stakeholders should not review and revise its approaches to using data and information in areas other than those covered below. Indeed, the data and ecosystem will always be evolving as the CfW becomes more established and the system works towards the vision set out in the School improvement guidance. Indeed, recommendation 13 suggests a process for doing this on an ongoing basis. Similarly, recommendations are for changes to current approaches only, so by no means preclude the continued use of data and information for other parts of the ecosystem not explicitly mentioned.
- 9.17 Finally, while the general principles apply to the data and information ecosystem as a whole (further discussion below), the specific recommendations can be taken somewhat separately. As an hypothetical example, recommendation 7 concerning consistent approaches to learner progression can be considered and, if accepted, implemented independently of recommendation 8 concerning learner wellbeing. A

general caveat to this comes from two of the criteria noted above, which were used to help develop the recommendations, namely ensuring that the data and information ecosystem reflects the breadth of the CfW and captures learning in an holistic way. So if, for example, the Welsh Government feel that the best approach to gaining an understanding of learner wellbeing is not via a new wellbeing survey, it should still consider how to ensure that wellbeing is prioritised sufficiently within the school system by some other means.

General principles

9.18 These principles are extrapolations from the approaches to using data and information suggested in the specific recommendations below. They are designed to cover all circumstances but are also intended as useful guides rather than strict rules to be followed unquestioningly. Given the breadth and complexity of the school system, situations may arise where it makes more sense to depart from them to better achieve the twin goals of implementing the CfW and achieving the vision set out in the School improvement guidance. In these instances, the Welsh Government and relevant partners should be able to satisfy themselves that there is a strong rationale for doing so.

1. Types of Indicators

Problem	<ul style="list-style-type: none"> The former approach of sharing school-level performance and other indicators (i.e. both sharing it with key stakeholder groups and making it available publicly) that ranked schools or made summative judgements (e.g. colour coding, league tables, ranking families of schools into quartiles) created several negative unintended consequences, such as creating competition rather than collaboration amongst schools, and attributing too much importance to single, partial indicators
Recommendation	<ul style="list-style-type: none"> The Welsh Government should avoid publishing indicators of individual school performance that involve rankings (e.g. school quintile for KS4 qualifications) and summative judgements (e.g. Red/Amber/Green) altogether Indicators that summarise complex information are of course still valuable and necessary for all partners to perform their core functions, but they should be more limited. The Welsh Government should use caution when creating and sharing them, especially for school-level data Findings section 4 above-described principles to apply when developing indicators. For instance, presenting a range of indicators to describe the same aspect of performance, avoiding indicators that imply too much meaning or value judgment, providing relevant context alongside indicators, and testing draft indicators with partners to understand potential consequences and risks before implementing

Discussion: risks, options, other considerations	<ul style="list-style-type: none"> • Deciding which kinds of indicators to use to summarise a particular aspect of learning, whether at a population-, school-, or learner-level, will always involve some element of judgement. This judgement does not exist in isolation from the culture, attitudes, and behaviours of stakeholders that will use the information • Given our research findings about the negative consequences of former approaches to using indicators that involved rankings of summative judgements about school performance, and current nervousness about whether it is possible to avoid these in future, we recommend that in the near term the Welsh Government generally should take a conservative approach when deciding on the kinds of indicators it uses or recommends and consult with schools on design • As the implementation of the CfW progresses and partners become more familiar with School improvement guidance, the Welsh Government can become less risk averse
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2. Principles for sharing and using school data

Problem	<ul style="list-style-type: none"> • While recent School improvement guidance sets out a clear vision and framework for how stakeholders across the school system should use data and information first and foremost for self-evaluation and improvement (“The majority of the energy and focus in the system should be on delivering school improvement”), our research, and when testing draft recommendations in particular, highlighted that this has not yet filtered through to changes in behaviour and practices at all levels of organisations, including in schools and the middle tier • Schools have concerns that, in the near term at least, publication of school-level data and sharing it directly with middle tier organisations will continue to invite scrutiny and accountability rather than enhancing self-evaluation and improvement
Recommendation	<ul style="list-style-type: none"> • In general, the Welsh Government should only analyse and publish data at a national level or other levels at which individual schools are not identifiable (e.g. regional, by specific sub-population) • However, schools’ own data is still valuable to them for self-evaluation and improvement purposes. The Welsh Government should therefore continue to share individual level reports with them (e.g. via AWCDs), which can include more limited indicators schools deem valuable • Some limited forms of school-level comparisons are also valuable to schools, as long as these are available only to them and are not used as comparative indicators for accountability purposes. These include comparison to a national average, and comparisons to groups of schools that are statistical neighbours in terms of population and demographics (i.e. families of schools) • Schools could share these reports with other schools in their region, with middle tier organisations such as local authorities and regional consortia, and with school communities at their own discretion and for improvement purposes
Discussion: risks, options,	<ul style="list-style-type: none"> • The recommendation above suggests that schools should have discretion over what school-level data is shared with middle tier organisations and local school communities. This should be seen as a

other considerations	<p>near term solution while the system becomes used to the new culture of using information first and foremost for self-evaluation and improvement. In later years, we expect that school-level data could be shared as a matter of course with partners</p> <ul style="list-style-type: none"> • When testing draft versions of this recommendation, the Welsh Government in particular raised concerns that in reality, schools might still face pressure to share information with middle tier organisations. Perverse consequences could arise, for instance, those schools that opt not to share their data with middle tier organisations automatically attracting additional scrutiny • To mitigate this risk, we recommend that the Welsh Government offer clear directives to middle tier organisations that this practice should not occur. If, however, system partners are still not confident this will mitigate the risk, schools should not be required to share their data at all with middle tier organisations. This is of course not desirable, and is discussed further in recommendation 13 below • There is also a risk that middle tier organisations would not be able to carry out their own accountability and self-evaluation functions without direct access to school-level data. We therefore suggest that Estyn continues to receive school-level data from the Welsh Government to carry out inspections (consistent with both their new Inspection framework and former practice). Regional consortia indicated, however, that their ability to support school improvement would not be hampered by not having direct access to school-level data • To ensure that schools are still engaging in collaborative self-evaluation activities, there could be a requirement that they share information with another for learning and peer-support
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3. Using sampling to answer policy questions

Problem	<ul style="list-style-type: none"> • the Welsh Government have several policy self-evaluation questions that they need to explore about the new curriculum, for which standardised data collected from all schools is required to answer fully. Collecting new standardised data from schools to answer these would however introduce significant and potentially untenable new burdens on schools if it only results in information that is valuable for the Welsh Government
Recommendation	<ul style="list-style-type: none"> • For aspects of self-evaluation and improvement at a national level that are deemed to be high priorities by the Welsh Government, and for which they require additional information from schools, the Welsh Government should generally employ sampling • Data from sampled assessments / surveys would be analysed and reported at either a national level or other levels at which individual schools are not identifiable (e.g. regional, by sub-population) • Schools participating in sampling activity would however receive a report with data from their own school for self-evaluation and improvement purposes (in line with recommendation 2) • The Welsh Government should maintain a register of all sampling activity to ensure approaches are consistent and representative, and

	<p>should aim to distribute burdens as evenly as possible amongst schools</p> <ul style="list-style-type: none"> • Guidance and materials for any assessments / surveys carried out on a sampled basis should be made available to all schools to carry out on an optional basis to support their ongoing self-evaluation and improvement
Discussion: risks, options, other considerations	<ul style="list-style-type: none"> • For aspects of the curriculum which are high priority for both the Welsh Government and schools to understand (e.g. wellbeing, learner skills), the Welsh Government could adopt a 'hybrid' approach to sampling, whereby all schools take part in sampled assessment / surveying activity on a two to three year cycle. In this way, new burdens are limited, but all schools still take part in assessment / surveying activity on a semi-regular basis and receive detailed information for their own self-evaluation purposes as a result • It is vital that any sampled assessment / surveying activities provides data that is valuable to schools themselves. Otherwise, there is a risk that sampled assessments / surveys may not be prioritised or taken seriously by schools, resulting in poor quality outputs

4. Transparency and communication with the public

Problem	<ul style="list-style-type: none"> • Transparency is one of the core functions of the data and information ecosystem. School communities (including parents and carers) in particular would appreciate a better understanding of their local school environment, learning, and effectiveness
Recommendation	<ul style="list-style-type: none"> • The Welsh Government and other key stakeholders should re-commit to transparency at a national and local level under the new data and information ecosystem. The general principle should be that, if data and information is being collected from schools or other parts of the system in a structured way, the findings should be made public (in line with recommendation 2) • For the Welsh Government, this applies particularly to major research or assessment activities that attempt to understand some aspect of the whole school system (e.g. a school survey collected on a sampled basis). It should be noted that this does not represent a major departure from current practice and applies more to future the Welsh Government activities as part of enabling objective 4 • Schools should also commit to a similar principle at a local school community level in the long term – with the MyLocalSchool platform being an appropriate platform to support this. However, we acknowledge that schools have concerns that, in the near term at least, publication of school-level data will continue to invite scrutiny and accountability rather than enhancing self-evaluation and improvement. As such, as in recommendation 2, we suggest that schools have discretion over what school-level data they publish in the near term, but that in later years, we expect that school-level data could be shared as a matter of course with partners, Changes to the MyLocalSchool platform are discussed below (see recommendation 11)

	<ul style="list-style-type: none"> • Estyn’s current transparency policies are in line with the content and ethos of the new curriculum, and should carry on as they are now (e.g. revised school inspection framework, consideration of a broad range of indicators, summative judgements removed)
Discussion: risks, options, other considerations	<ul style="list-style-type: none"> • It should be noted that this principle of transparency may be at odds with the Welsh Government’s goal to drive greater self-evaluation and improvement, especially at a school community level. For instance, publishing additional information about the school environment and performance on MyLocalSchool might attract additional scrutiny, either driving perverse behaviours or dissuading schools from sharing information about areas that require improvement • Achieving greater transparency for school communities may therefore be a gradual process, with less additional information released by schools in the near term while parents and school communities become more used to the broader focus of the CfW. It should however be the long-term goal • Additionally, to mitigate this risk, information shared should always be contextualised, and individual indicators should not appear more important than others to pre-empt perverse behaviours by supporting the desired interpretation of information

Specific changes to the use of data and information

5. Understanding key learner skills

Problem	<ul style="list-style-type: none"> • For learner attainment, the former data and information ecosystem placed disproportionate focus on KS4 outcomes. The new curriculum prioritises a broader range of knowledge and understanding, including a wide range of important skills and capabilities • Schools and other stakeholders have limited ability currently to understand learner development of these skills in a consistent way, beyond their own self-evaluation activities
Recommendation	<ul style="list-style-type: none"> • the Welsh Government should lead the creation of learner assessments to capture a broader set of skills than existing numeracy and literacy assessments prior to KS4 examinations • Assessments could be carried out across a different sample of schools each year, with the Welsh Government analysing and publishing national level findings. Participating schools would also have access reports with their own data for self-evaluation and improvement purposes • If possible, a similar or the same system should be used to administer assessments as that used for the current literacy and numeracy assessments. This system is relatively straightforward for schools from both a usability and technology perspective, and enables schools to see their own data/results as well as gathering results at a national level • All schools would have access to any assessment tools for optional self-evaluation activities (i.e. years they are not included in sampling) and guidance for interpreting findings and sharing them with school communities, created by Welsh Government

	<ul style="list-style-type: none"> • Should this recommendation be accepted, we propose the Welsh Government carries out more detailed further research to determine both the skills should be assessed and the approach – working with schools to develop assessments that are valuable as part of teaching and learning. To minimise additional burdens on schools, a single assessment that covers the range of skills considered important in the CfW could be developed
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • There are a wide range of skills and capabilities prioritised in the new curriculum that are not currently captured in any consistent, standardised way. These include mandatory cross-curricular skills (i.e. numeracy, literacy and digital skills), skills integral to the four purposes (i.e. creativity and innovation, critical thinking and problem solving, personal effectiveness, planning and organising), as well as other skills mentioned throughout curriculum guidance and in middle tier organisations' own improvement and accountability frameworks (e.g. resilience). Some schools are also currently experimenting with assessments of cognitive ability. These are outlined in section 6 above • The primary challenge with this recommendation is finding an appropriate mode of assessment that does not create significant new burdens for schools, but which can provide both them and the Welsh Government with sufficiently valuable and robust insights about learner skills development. Careful design of the sampling methodology could go some way to reduce this burden • The recently published Scoping study for the evaluation of the curriculum and assessment reforms in Wales also recommends that the Welsh Government carry out a national monitoring study focused on attainment and progression, which would include cross-curriculum skills of the kinds identified above but including further learner and contextual factors (e.g. attitudes, teacher practices) and using a range of assessment methods (e.g. 1:1, group assessment, online assessments). This kind of study would be supported by Social Finance. However, it should be noted that the purpose of this study is to provide insights for the Welsh Government on the progress of the new curriculum, not to provide ongoing information to schools themselves for learning purposes, which emerged from our research as an equally strong need. This is why we also recommend a more regular, simplified, and consistent approach to assessing learner skills development • The Welsh Government and Schools will also have to consider the material burden placed on schools from coordinating online assessments or data collection (i.e. surveys). For this reason, skills assessments may be most valuable in the early years of the reforms as the system shifts away from the focus on KS4 indicators – over time, the frequency of skills assessment could decrease • If schools (and other stakeholders) feel that additional assessment(s) of skills as outlined above would create too much of an additional burden and would not be justified by the information they would generate, the Welsh Government could instead develop a package of assessment tools and approaches and provide these to schools for use on an optional basis for self-directed self-evaluation activities. The

6. Supporting consistent approaches to learner progression

<p>Problem</p>	<ul style="list-style-type: none"> • Schools are concerned that they do not have a consistent understanding of aspects of the new curriculum relating to progression • Although under the new curriculum schools will develop and teach their own curricula, the current KS4 qualifications arrangements will remain in place for the next four years. There is therefore a risk that, without some more consistent understanding of progression, learners could unwittingly under-perform at KS4 relative to their peers in other schools
<p>Recommendation</p>	<ul style="list-style-type: none"> • We propose that the Welsh Government commission further research to determine how best to support consistent approaches to learner progression • One option is to develop a standardised assessment framework linked to progression. However, this is not recommended. We and almost all stakeholders consulted on this topic feel this would be both contrary to the ethos of progression in the reforms, and in practice would be very challenging and time consuming to create and then administer • Our preferred option would be for some practice change(s) within schools and/or middle tier organisations to support schools to develop more consistent approaches to understanding and benchmarking learner progress. The following possible approaches emerged during testing of a draft version of this recommendation: <ul style="list-style-type: none"> • The middle tier work more closely with schools on the topic of progression, potentially conducting periodic learning reviews of individual school approaches to inform their own support approaches and to share with other schools in the region • A peer-led approach, whereby schools themselves conduct periodic visits to other schools to observe how their practices and approaches to progression, and share their learning with others
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • Finland, which underwent similar education reforms to those in Wales some years ago (i.e. removing quantitative learner assessments prior to age 16 alongside a renewed focus on progression) experienced a similar challenge. Schools and other stakeholders in the system therefore called for some alternative approach to ensure learners in different schools were progressing at broadly the same pace • The government responded by tasking its equivalent of Estyn with conducting short, regular assessments of schools' understanding and teaching of aspects of the curriculum relating to progression. Reports were published so other schools could compare and contrast their own approaches, and to give confidence to school communities • Note that we are not recommending exactly the same approach, as there is a risk that in Wales if Estyn carried out similar reviews it could become an accountability exercise rather than for self-evaluation and improvement. However, some form of similar qualitative approach does appear to be necessary to support schools to learn from one another and benchmark their learners' progression

- It should be noted that, while this report was being drafted, the Welsh Government has already started issuing more guidance to address this issue.¹⁶ It may therefore be that further formal changes to guidance and practice as recommended here are not necessary – however we suggest that the Welsh Government does continue to monitor this issue closely over the coming months to see whether recent guidance is sufficient.

7. Learner wellbeing and voice

Problem	<ul style="list-style-type: none"> • Promoting learner wellbeing is a core part of the CfW. Although schools currently use a variety of approaches, including observation and surveys, to understand their learners' wellbeing, the Welsh Government currently is limited in its ability to carry out analysis into learner wellbeing at national, regional and local levels to inform its own policy self-evaluation
Recommendation	<ul style="list-style-type: none"> • The Welsh Government, should carry out further work to understand the feasibility of generating wellbeing data from both primary and secondary schools annually – while ensuring the data is both representative at a national level and is useful for schools. Sampling may help to achieve this and could be considered. This could support with ensuring all schools are considering wellbeing as well as giving Welsh Government a national picture annually, from a wider set of schools than those that currently 'opt in' to existing surveys. Data would be analysed and published at a national level to gain insights into how the CfW is contributing to improving learner wellbeing overall. Participating schools would also receive a report with their own results for self-evaluation and improvement purposes. We do not propose that Welsh Government mandate that all schools complete wellbeing surveys annually. • The same survey tool should be made available to all schools for use on an optional basis, though we propose that the Welsh Government encourage its uptake. • Reviewing and developing wellbeing surveys currently available is preferable to introducing a new survey from scratch (discussed below). The Welsh Government should support the development of existing surveys and encourage their uptake within schools – even if it is not determined to be feasible to have sampled annual testing. • The Welsh Government should also lead in the creation of a Learner Voice Survey (LVS). The LVS would collect learners' views on their school environment, wellbeing support available to them, and challenges facing their school. It would also give learners the opportunity to raise other issues where they feel they are not heard. The LVS would help center curricula on learner wellbeing, to compliment the national learner wellbeing survey

¹⁶ For example, the [Supporting materials for curriculum, assessment and evaluating learner progress](#) includes specific guidance for [developing a shared understanding of progression](#). A [Ministerial Direction](#) provides additional guidance on developing a shared understanding of progression both within and across schools.

	<ul style="list-style-type: none"> • This survey would be an optional tool for schools to use for self-evaluation and as a communication tool with learners and the wider school community. The results of the LVS would not be collected by the Welsh Government to understand the national picture, as for the wellbeing survey • The Welsh Government should create a system and process for administering the LVS survey to reduce burdens on individual schools. For instance, it could develop a self-service portal/system and include a combination of mandatory questions that all schools would use, plus thematic modules with a range of pre-designed questions that schools can choose from on topics that are likely to be relevant • Additionally, the Welsh Government should develop guidance and support on how schools can interpret survey results and incorporate them into development plans
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • Several learner wellbeing surveys are already available for use by schools. Some, like the SHRN – the Welsh Government is part of the SHRN research consortium and a joint funder – are widely used already. The SHRN network consists of over 200 member schools, including all maintained secondary and middle schools in Wales, and carries out a biennial survey of learner health and wellbeing amongst pupils in its member secondary schools, which has 90 percent plus uptake. • Therefore, to avoid duplicating these surveys and introducing additional burdens for schools, the Welsh Government should consider developing the SHRN. This includes undertaking work to increase awareness and uptake amongst secondary schools, policy teams, and wider system stakeholders. • Further, Welsh Government should also consider carrying out work to ensure schools understand how to make use of SHRN data and how this data can fit in with Curriculum for Wales’s aims. This work could also be informed by research to understand schools’ views on data that they would find valuable to inform self-evaluation and could be reasonably included in the survey – with the caveat that some topics may not be possible nor ethical to gather as part of the survey. • A feasibility study is currently being carried out within primary schools and we propose that this be continued with and that the Welsh Government support SHRN to develop the primary network, should the feasibility study suggest that further roll out of the survey be beneficial. • . • . • In many schools, a LVS would however be a new burden – although our research did indicate that some schools currently use some form or survey or other approach to understand learner voice. We therefore recommend that this survey is optional <p><i>Note: The researchers did engage with the team at SHRN but at a late stage of the project. As such, Welsh Government should further explore any the appropriateness of any recommendations with them before proceeding.</i></p>

8. Staff wellbeing

Problem	<ul style="list-style-type: none"> • Staff wellbeing is a core enabler of the success of the new curriculum according to the CfW Theory of Change. But there is no consistent, national approach to understanding staff wellbeing, and our research found that individual schools also do not attempt to capture it as often / as rigorously as they do learner wellbeing
Recommendation	<ul style="list-style-type: none"> • The Welsh Government should lead the creation of a survey like the proposed learner wellbeing survey (recommendation 7 above) but focusing on staff wellbeing • This could be implemented either as an additional module within Staff Workforce Annual Census (SWAC), or the Welsh Government could lead the creation of a new survey, like the learner wellbeing survey recommended above. The former option is preferable, as it would meet stakeholder needs but incur fewer new costs and additional burdens than setting up a new survey from scratch • The Welsh Government would analyse and publish findings at a national level, while schools would receive their own data for self-evaluation purposes and to discuss with their own staff
Discussion: risks, options, other considerations	<ul style="list-style-type: none"> • As with learner wellbeing, the main drawback of establishing a staff wellbeing survey is the additional time burden on schools to fill it out and act on the results. Including an additional module within the SWAC would limit this cost/burden but not eliminate it • If this recommendation is accepted by the Welsh Government, it should therefore ensure that questions are kept as short as possible and that they are designed to provide insights for both its own learning and improvement purposes and for those of schools

9. Contextualising school indicators and ability to interrogate equity impacts

Problem	<ul style="list-style-type: none"> • Multiple stakeholders reported that, under the former data and information ecosystem, not enough consideration was given to local school and population context when stakeholders other than schools interpreted school-level indicators (e.g., KS4 qualifications, attendance) • Historically the eFSM indicator was used to provide this context. However, its value was questioned by some stakeholders. It is estimated that many learners in poverty are not eligible or do not claim eligibility already, and with the introduction of universal free school meals for primary learners, there are uncertainties about current accuracy rates falling further. • Some stakeholders also raised possible gaps in learner-level characteristics data for effective analysis of the equity impacts of the new curriculum (e.g., gender, social factors) • Risk of no change in this area would mean issues persist with schools' data being interpreted without proper context by key system stakeholders
Recommendation	<p>This recommendation has two parts:</p> <ul style="list-style-type: none"> • i) Providing greater context to support interpretation of school-level data and indicators: <ul style="list-style-type: none"> • the Welsh Government should match pupil postcodes collected in the PLASC with the Welsh Index of Multiple Deprivation database

	<p>(WIMD) to calculate a school-level IMD indicators. This analysis would be carried out by the Welsh Government and reported back to schools to minimise burdens on schools</p> <ul style="list-style-type: none"> • Any school-level reporting (e.g., AWCDs reports, MyLocalSchool) could then include this school-level IMD information, ensuring it is visible alongside other indicators (e.g., KS4 achievement) • ii) Enabling more granular analysis of the equity impacts of the new curriculum: <ul style="list-style-type: none"> • the Welsh Government should consider collecting additional learner-level characteristics in the PLASC, such as demographic data (e.g., gender identity) and socio-economic factors (e.g., young carer, experience of the care system) that could enable more granular equity analysis where there may be a link to impact on education outcomes • Data definitions for any new items would need to be added to existing technical completion notes for the PLASC
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • The Welsh Government is currently carrying out a review independent of this research into how to best understand school-level deprivation with the roll-out of the universal free school meals for primary learners. Our recommendation (i) should feed into this process, but the outcomes of the review will determine the final indicators to be used • It should be noted that the purpose of recommendation (i) is to provide greater context alongside other school-level indicators and reports. It is not intended as a wholesale alternative or replacement to current methods of calculating school-level deprivation (e.g., for use in funding decisions). • It should be further noted that there are cross-government conversations ongoing to develop consistent approaches to understanding and recording an individual's sex, gender identity, national identity and ethnicity data which is relevant to our recommendation (ii). Any changes to the PLASC should follow the outcome of these conversations • The Welsh Government would however need to determine the utility and ethics of including more socio-economic factors in the PLASC (e.g., experience of care), and consider the likely quality and value of this data against the burdens of collecting and reporting it. We would suggest that learners have the option not to disclose this information where they do not feel comfortable doing so • Some learner-level characteristics that could be newly collected are legally defined protected characteristics, so the highest standards of data protection and quality assurance are required

10. Greater transparency with school communities

<p>Problem</p>	<ul style="list-style-type: none"> • Parents, carers and school communities stand out from the other stakeholder groups we consulted as requesting greater levels of information about their local schools. This is the case for both information on individual learner progress, and for information about general school performance, characteristics, and environment
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<p>Recommendation</p>	<ul style="list-style-type: none"> • We recommend that in the near-term schools be given discretion over the information they share with school communities, but that in the long term a broader range of school level information be made available to school communities. • The Welsh Government should lead or commission a review of the MyLocalSchool platform’s systems and content. We feel that the platform’s stated goal of providing a ‘sketch of a school at a glance’ is still very much valid, though at present, the content is reflective of the data and information considered important under the former curriculum rather than the CfW • It should instead present a broader range of information, including indicators of achievement, attendance, and other aspects of learning, as well as more nuanced contextual information about school population and environment including wellbeing (consistent with above recommendations). The Welsh Government should follow Centre for Digital Public Services best practice guidelines when designing the portal to ensure information and its presentation is tailored to the needs of the public • Importantly, the indicators presented on MyLocalSchool should be displayed in such a way that does not suggest some indicators are of greater importance than others, and always alongside appropriate contextual information • The portal could also be used to link to information about schools currently hosted elsewhere online (e.g., Estyn inspections, new required summaries of self-evaluation and improvement priorities on school websites) therefore avoiding duplication of existing content • Schools could have some option to upload their own information as well, including short qualitative summaries of any standardised or bespoke assessment activities (e.g. a wellbeing survey, LVS results, updates on development plans), which parents and school communities expressed a preference for • Eventually, the revised MyLocalSchool portal could also serve as the primary source of school-level information for middle tier organisations • Schools should be involved in co-designing a revised version of MyLocalSchool.
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • It should be noted that sharing more information with school communities is perhaps contrary to general recommendation 2 above as well as specific recommendations such as those for KS4 qualification outcomes data (12). There is a general tension between the function of transparency and the broader school system goal to re-prioritise using data and information for self-evaluation and improvement. • We recommend that, in general and in the near term, the Welsh Government should continue to prioritise changing the culture of key stakeholders in the system around the use data and information, which could mean limiting the amount of type of school-level information shared with school communities • This recommendation relating to MyLocalSchool could therefore be paused until the public and school communities are more familiar with the broader focus of the curriculum CfW, and risks around additional

information being used for accountability rather than self-evaluation purposes are reduced

- The phasing of changes to the ecosystem is discussed further under recommendation 13
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Key Stage 4 qualifications outcomes data

11. Revised approach to KS4 qualifications indicators and data sharing

- 9.19 The qualifications that learners sit in year 11 themselves are outside the scope of this research project. However, arrangements for collecting, processing, sharing, and using qualifications outcomes data are relevant and important to the data and information ecosystem.
- 9.20 A summary of our findings relating to historic practices for KS4 qualifications outcomes data appear in the Findings sections 6 above. To develop a recommendation for future changes, we synthesised this information and applied the following important principles that emerged over the course of our research:
- breadth and parity of curriculum – indicators should aim to reflect the breadth of the curriculum and what is states to be important
 - rounded understanding of attainment – indicators should avoid distilling too much information into single headline indicators, which drove many of the negative behaviours arising from previous versions of KS4 indicators
 - breadth of qualifications – similar to the above principle, while literacy and numeracy are important, other subjects should not be devalued or deprioritised as a result of indicators used (e.g. L2+)
 - progress – this is a central principle in the CfW, so should be reflected as much as possible in KS4 indicators
 - intelligibility – indicators and other statistics, and the reports in which they are presented, should be simple and easy to understand and should align to the self-evaluation needs of users, including schools
 - culture of self-evaluation and improvement – KS4 qualifications outcomes indicators and the way they are used and shared should be consistent with the goals in the School improvement guidance, in order to create an education culture that is first and foremost about self-evaluation and improvement.
- 9.21 Based on our research findings relating to KS4 qualifications outcomes data and these guiding principles, we have developed the following recommendation. It

should be noted that Social Finance are not experts in statistics, so this recommendation is for a high-level approach rather than suggesting the use of any specific statistical indicators.

<p>Approach</p>	<p><u>Summary:</u> the Welsh Government should aim to create a basket of useful indicators for schools to understand their KS4 qualifications outcomes in a rounded, contextual way, for self-evaluation purposes. The Post-16 approach (i.e. consistent measures) is a useful guide.</p> <p><u>Detail:</u> the Welsh Government should re-instate AWCDs reports for KS4 qualifications outcomes including a basket of indicators. This should include, but is not necessarily limited to: indicator(s) to summarise qualification outcomes, a destinations indicator(s), and qualification/subject level summary statistics. A value added indicator would also be valuable, if it is possible to introduce this without too many other changes to assessment frameworks.</p> <p>With the right messaging and guidance, these indicators should provide schools with a rounded picture of learner attainment, with no one indicator being seen as the most important.</p> <p>Improved context indicators and comparisons to other schools based on statistical neighbours (or other meaningful comparators) should also be included (as per above recommendation 9). However, ranking schools into quartiles was previously unhelpful, so instead schools should receive simple comparison to averages or see their own data presented alongside that of other schools in the family. Estyn are strong proponents of comparisons to residuals (i.e. modelled results which take into account contextual factors). This appears sound, as long as the outputs are easily to interpret by schools themselves and others that might see and use the data. This should be tested with schools.</p> <p>Indicators and data sharing should align with general principle 1 and 2 (i.e. remove rankings, the Welsh Government publish national data only, schools receive their own data).</p>
<p>Specific recommendations for the Welsh Government</p>	<ul style="list-style-type: none"> • Qualification outcomes: consult on the most appropriate indicator that can simply and transparently summarise qualifications achievement while minimising negative consequences experienced using, for example, the L2+ measure. No summary indicator will do this perfectly; some combination of indicators might be preferable to create a rounded understanding • Destinations: Consider using the Longitudinal Education Outcomes (LEO) dataset to provide school-level destinations reports for all secondary schools. While such indicators will inevitably report on historic school performance, it is important that destinations is included in the way the school system thinks about attainment at KS4. This emerged strongly from school consultation, including with special schools and other non-mainstream settings • Value added: conduct a short research project to explore what changes would be required to introduce high quality value added measures. Note, however, that we expect this would mean introducing additional assessments (e.g. at Key Stage 2/3), which

would go against the ethos of the reforms and introduce significant new burdens for schools

- School needs: commission a user research project to redesign AWCDS reports to ensure they align to schools' self-evaluation and improvement needs (e.g. simple, accessible, meaningful). Many schools are currently able to create their own analysis of KS4 qualification outcomes quickly and easily, so AWCDS reports should focus on providing information that is harder for schools to generate themselves (e.g. meaningful comparisons to families of schools) while providing a backstop of consistent information for schools that have lower analytical capability. Appropriate comparisons should also be considered (e.g. to national averages, average of a grouping of schools sharing characteristics, / other meaningful comparators, residuals)

The Welsh Government will make a decision this autumn (2022) whether to pause the re-introduction of the former KS4 performance measures and reporting system for another two years. If this is the case, there is an opportunity to trial the above approach at a small scale in selected schools. The goal would be to see whether re-introducing a new set of KS4 qualifications outcomes indicators in this more limited fashion would indeed support improved self-evaluation, or increase scrutiny and accountability of school performance.

Discussion

- It should be noted that no indicator that attempts to distill and summarise complex learner- and school-level performance information will ever be perfect
 - However, based on our research, the advantages of providing schools with consistent information about KS4 qualifications outcomes for learning purposes in the way outlined above outweigh the risk of it introducing additional accountability and scrutiny into the system. But this is true if and only if they are received by a system that is truly focused on self-evaluation and improvement. the Welsh Government can manage the risk through both the kinds of indicators that are used and shared, and importantly, through corresponding messaging/guidance and practice changes within schools and middle tier organisations
 - Finding the right approach to report on KS4 qualifications outcomes is therefore about finding level of information and data sharing that the current system can tolerate while still being geared towards self-evaluation and improvement. the Welsh Government should perhaps err of the side of caution in the near term (e.g. less summative indicators, less data sharing)
 - Given the sensitivities around KS4 qualifications outcomes, there is potentially also a hard trade-off between the core functions of transparency and self-evaluation. To promote the latter, the Welsh Government should for instance avoid publishing school-level data and provide this only to schools. This would mean the wider public does not have ready access to this information. It is the author's view this is an acceptable limit to transparency in the near term in order to create the culture of self-evaluation that is prioritised in the reforms.
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The system should however work towards increasing transparency over the longer term

- A final consideration is the media. In testing this recommendation, the Welsh Government felt there is a strong likelihood that, even if school-level KS4 qualifications outcomes are not published, media outlets would submit FOI requests to access this information to create national league tables etc. The Welsh Government could therefore prepare statements in the event that media publish KS4 leagues tables that: re-emphasise the expanded vision of the CfW and new approaches to using data and information; point to aspects of learning like wellbeing and skills that are of equal importance to KS4 qualifications outcomes; and explaining the relationship between KS4 outcomes qualifications indicators and socio-economic factors such as income and social capital.
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Continuing to evolve the ecosystem

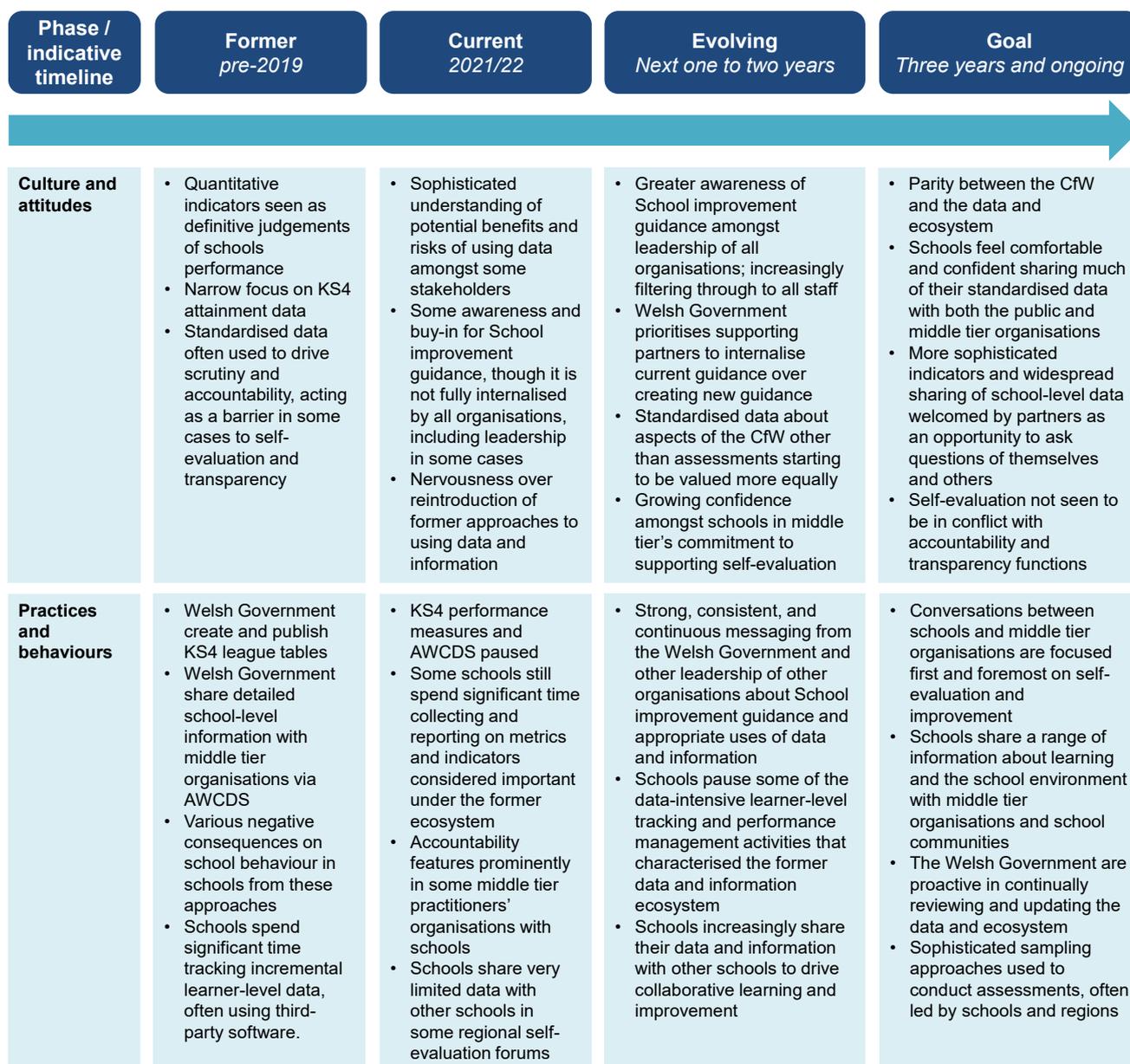
12. Roadmap for building a culture of self-evaluation and improvement

- 9.22 The Welsh Government and other partners consulted during this research need a data and information ecosystem that helps achieve the vision of the CfW (e.g. helping learners to achieve the four purposes), in which all stakeholders value and use a wide range of data to drive continuous self-evaluation and improvement. However, the specific data items collected and the indicators created, shared, and used can only go so far in creating this. The culture and attitudes of practitioners in all organisations and at all levels of the system are of equal importance.
- 9.23 For example, recommendation 1 above proposes that the Welsh Government limit the use of rankings and summative judgements when sharing school-level indicators; recommendation 14 articulates this general principle for KS4 qualifications outcomes. However, if stakeholders are not bought into the ethos of self-evaluation and improvement, there is still a risk that even this more limited use of information and indicators still invite additional scrutiny and the negative unintended behaviours experienced under the former data and information ecosystem persist.
- 9.24 The entirety of our consultation with stakeholders, but testing of draft recommendations in particular, showed clearly that the system still has some distance to go in achieving the root-and-branch culture around the use of data and information that will enable the vision of the CfW (see Findings Section 8 above). While many stakeholders and individuals we engaged with are fully bought into the ethos of the new School improvement guidance, this message has not yet filtered

through to all levels of all organisations. While it was not possible to ascertain the precise extent of this, our research and testing suggested that this is true all of the key stakeholders groups, and for the public and media as well.

- 9.25 Alongside the above recommendations for specific changes to the use of standardised data, the Welsh Government should therefore continue and indeed strengthen its current efforts to communicate the School improvement guidance and influence the behaviours and culture of all stakeholders within the system with regard to data and information. This includes key stakeholder groups as well as others such as employers, the public, and the media.
- 9.26 And although there is a desire to continue driving forward with implementation of the CfW as quickly as possible, it might also be prudent to phase in gradually any practical changes to data and information arising from the recommendations above. Indeed, it might be that over the next one to two academic years, the most effective strategy is to change very little, and instead focus on communicating to schools and middle tier organisations the kinds of practices that they can now stop that were required previously. This would give organisations more time and headspace to absorb the messages within the School improvement guidance, and ensure that subsequent changes have the intended effect. In practice, this might mean pausing any changes altogether and instead to focusing on promoting current School improvement guidance to ensure it is fully embedded and understood at all levels of all tiers. This will require active engagement of schools (e.g., re-circulating guidance, holding training webinars, guidance to middle tier organisations to themselves promote School improvement guidance within schools).
- 9.27 One final consideration is that many of the recommendations above do not necessarily reflect the 'ideal' state of the data and information ecosystem that Welsh Government want to create. For instance, it would be both simpler and more transparent for the Welsh Government to share school-level data with middle tier organisations and local school communities at the same time it is shared with schools. However, our research suggest that this would be detrimental to developing the kind of culture outlined in School improvement guidance. The specific recommendations should therefore perhaps be seen as steppingstones, that are pragmatic in balancing the vision the Welsh Government has for the ecosystem and the CfW against the present reality.

Figure 9.1: Roadmap for building a culture of self-evaluation and improvement



9.28 Over the longer-term, the goal should be a system in which all stakeholders have a sound understanding of both the benefits and risks of using data and are committed to the principle of self-evaluation and improvement. Once this has been achieved, hesitations over what school-level information is seen and used by whom will reduce. Welsh Government can then consider increasing the amount and sophistication of standardised data shared within the system, confident that stakeholders will see it as a valuable opportunity to ask questions of themselves and others for learning and improvement.

13. Approach to ongoing review and development of the ecosystem

9.29 At the time of this research project, the Welsh school system is part way through the implementation of the CfW. New challenges relating to the use of specific data and information will undoubtedly emerge as this continues. And as described in the previous recommendation, there is also still a gap between current culture and attitudes and the vision for the way data and information should be used as set out in the School improvement guidance.

9.30 We therefore suggest that the Welsh Government introduce an annual review process to help ensure the data and information ecosystem evolves in step with the implementation of the new curriculum, and address issues and take opportunities as they arise. It will also help the Welsh Government to maintain a close understanding of culture and attitudes towards using data and information within the system, and to continually adapt its practices, approaches, and guidance accordingly. This is summarised in the bullet points below and in Figure 9.2. It is broadly an adapted and streamlined version of the approach used in this project:

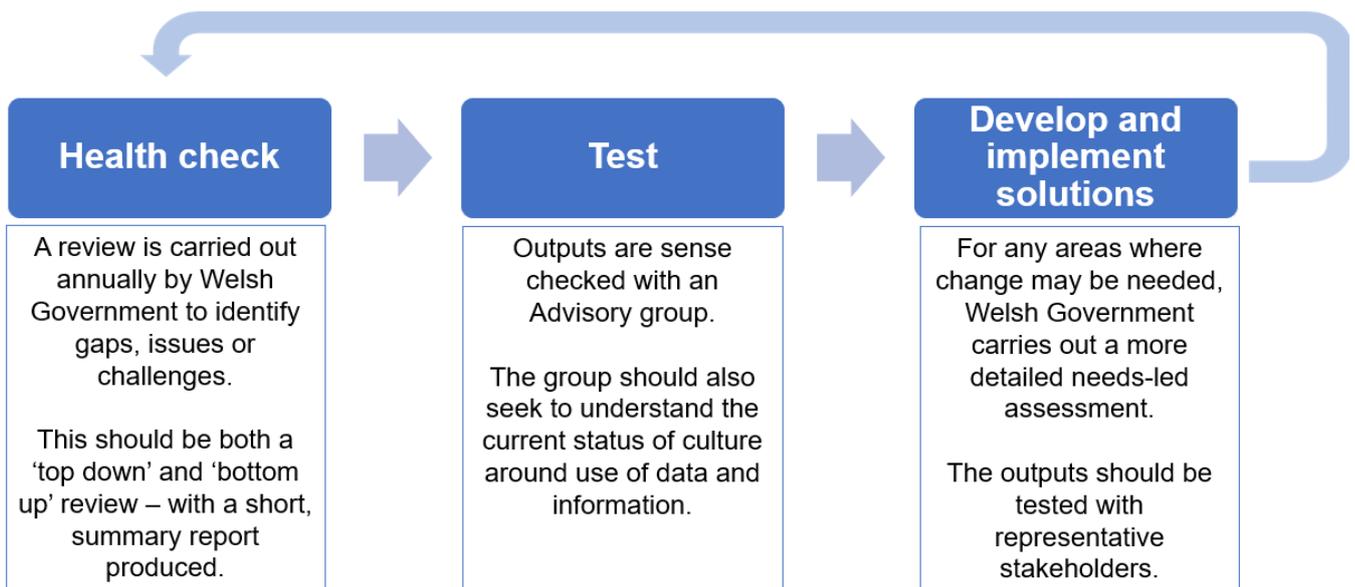
- health check – the Welsh Government conducts a brief, annual review (e.g. one person over the course of one month / six weeks) of the data and information ecosystem to identify and gaps, issues, or challenges. It should be both ‘top down’, looking across key aspects of the curriculum and assessing how well each stakeholder is able to carry out its key functions; and ‘bottom up’, starting with each key stakeholder and their specific needs, and again assessing how well they are able to carry out key functions. The output would be a short report and decision on whether there are any priority issues and/or areas where more research is needed. Testing stakeholder attitudes and behaviours should also be part of this health check
- test – the outputs are tested with a small advisory group with members from each of the key stakeholder groups, plus others as required
- develop and implement solutions – if there are any areas identified where there are significant challenges with current approaches, or where additional data or information is needed, the Welsh Government team conducts a more detailed needs-led analysis to identify possible changes. This would use a template to tease out the benefits and risks of different options and balance the needs of different stakeholders, and involve one-to-one consultation with relevant

representative stakeholders. The outputs would again be tested with the advisory group before any decisions over whether to implement.

9.31 There have been a number of changes to indicators and other approaches to using data and information over recent years (in part due to the pandemic), which has caused some confusion and frustration for stakeholders in the system. As such, when determining whether any changes are required, we propose that the default should be avoid making significant changes unless there is strong evidence that the current data ecosystem is not working as intended or is actively damaging.

9.32 This process could also be run more frequently over the next one to two years while schools and other stakeholders are still becoming familiar with new curricula and ways of working.

Figure 9.2: Summary of iterative ongoing review of data ecosystem process



Annex A – Summary of stakeholder engagement

Table A.1: Summary of stakeholder engagement in Phase 1

Stakeholder group	Desktop research	Scoping interviews
Association of Directors of Education in Wales	✓ (Captured through LAs research)	✓
Careers Wales	✓	
Diocesan authorities	✓	
Education Workforce Council	✓	
EOTAS Leads	✓	
Estyn	✓	✓
Local authorities	✓	✓
National Academy for Education Leadership	✓	
Parents and Carers	N/A	
Qualifications Wales	✓	✓
Regional consortia	✓	✓
Schools with a religious character sector	✓	
Teachers unions/representative bodies	✓	
the Welsh Government Policy Teams	✓	✓ (Welsh Language Team engaged with in Phase 2)
Welsh Local Government Association	✓ (Captured through LAs research)	✓
WJEC awarding body	✓	

Table A.2: Summary of stakeholder engagement during Phase 2

Stakeholder	Engagement carried out
Careers Wales (on behalf of employers)	1 x interview to speak to views of employers
Coleg y Cymoedd	1 x interview
Diocesan authorities	1 x interview with representative of the Catholic Church in Wales 1 x written feedback from Church in Wales representative
Estyn	1 x focus group with key Estyn stakeholders

	1 x focus group with Peer Inspectors
Local Authorities	1 x interview 1 x focus group with Education Other Than At School Local Authority representatives
Learners	1 x focus group with primary age (7-11) learners 1 x focus group with secondary age (12-16) learners 1 x interview with secondary age (12-16) learner <i>Coordinated by and facilitated with Children in Wales</i>
Parents and Carers	Parental survey to gain insights from a broad range of parents and carers in a light touch way 1 x focus group with parents and carers
Qualifications Wales	1 x focus group
Regional consortia	2 x focus groups with regional consortia representatives
Regional Skills Partnerships (on behalf of employers)	1 x focus group to speak to views of employers
Schools ¹⁷	3 x interviews with representative headteachers 12 x interviews with 12 schools 1 x interview with school governor 1 x written feedback from 4 schools
the Welsh Government	Regular 'Show and Tells' with project team 3 x interviews with the Welsh Government policy colleagues 1 x interview with Higher Education Relationship Lead 1 x interview with Further Education Relationship Lead

Table A.2: summary of engagement to test draft recommendations

Stakeholder	Engagement schedule
Schools and Local Authority Representatives	2 x webinars (15 participants across both sessions) <ul style="list-style-type: none"> • From 8 different local authorities • From Primary, Secondary, and All-through school 1 x survey follow-up to the webinar
Steering Group	1 x meeting with space for feedback and discussion
Advisory Group	1 x meeting with space for feedback and discussion
Welsh Government Policy Teams	2 x meeting with space for feedback and discussion

Annex B – Example detailed user needs document

Table B.1: Illustrative example of detailed user needs documents – excerpt of document sent to schools

Data needs	Data currently available	Potential gaps and limitations	Feedback requested
<p>•</p> <p>Wellbeing</p> <p>As a key indicator of the quality of their curricula and teaching, schools will need to monitor learner and staff wellbeing regularly.</p> <p>This measure can be assessed through first-hand evidence, but this may be difficult to do regularly at a school or even class-level.</p>	<p>Most Welsh Government guidance advises that data from the Schools Health Research Network questionnaires (Strengths and Difficulties, and School Environment) is used. However, we are aware that schools may also use bespoke surveys of learners to assess wellbeing of pupils.</p> <p>Schools also have datapoints on learners that can be used as proxy metrics such as:</p> <ul style="list-style-type: none"> • Attendance • Behavioural incidents (including bullying) • Exclusions and referrals to specialist support • SEND • Care experience • Disability • Other health issues • Free School Meals 	<p>At present, there is no standardised, comparable data available across all schools for wellbeing. The SHRN’s Strengths and Difficulties Questionnaire is widely used but currently only assesses the wellbeing and mental health of secondary school learners – and there is a gap for data on primary school learners while a pilot is carried out.</p> <p>The SHRN is currently biannual and schools could consider administering their Strengths and Difficulties questionnaire more frequently to have more up-to-date pictures of learner health.</p> <p>There may not also be data to assess how well external support services are accessed or data on resilience skills.</p>	<p>1. To what extent do you agree that this need should be considered for standardised / comparable data? <i>Please rate between 1 and 5, with 1 being do not agree and 5 being strongly agree.</i></p> <p><i>[Space for schools response]</i></p> <p>2. What made you give this rating?</p> <p><i>[Space for schools response]</i></p> <p>3. Any general comments on the available data or potential gaps, and in particular any considerations we have missed in relation to this area</p> <p><i>[Space for schools response]</i></p>

Annex C – International exemplar literature review methodology

- 9.33 Scope selection – we carried out some preliminary scoping of countries to identify relevant countries or regions. There were two broad criteria: similar characteristics to Wales as a country (e.g. population size, bilingual system); similar education systems, and ideally, recognised as exemplars in some aspect of the use of data and information particularly relevant to our findings from phases 1 and 2 (e.g. wellbeing, sampling). The countries selected for study were Finland, New Zealand (Aotearoa), Singapore, Spain (focused on Catalonia and the Basque Country). We also conducted shorter and less detailed scans of policy in Scotland and Northern Ireland.
- 9.34 Research questions – the findings from activities during phase 1 and 2 of this project informed our research questions for the international review. We therefore aimed to explore these specific aspects of data and information ecosystems in other countries: wellbeing, sampling, bilingual/plurilingual data capture, progression, and communication. From these topics we developed the questions like the one shown in the title of Table C.1 from which we then drew our initial key terms to carry out structured searches.
- 9.35 Research method – due to the specificity of our research questions and the policy area, we anticipated that the main sources of information for the review would be government policy documents, grey literature, and other non-academic sources. We therefore employed a modified version of a typical structured rapid evidence review. For example, we carried out iterative searches using open access search engines and databased (including ProQuest, Scopus, and Google Scholar), varying search terms iteratively to see which terms yielded the highest density of relevant results. The advanced google search function tended to yield the most useful results. An example of this approach is documented in Table C.1. The output of research was a short report with the key findings against each of our research questions. We also conducted a follow-up conversation with representatives of a New Zealand government partner to understand more about their approach to standardised learner wellbeing surveys.
- 9.36 Table C.1 below provides an example of iterative searches in Google Advanced Search based on the question “How does the evaluation of wellbeing of learners and teachers in schools in Wales compare to approaches in other countries?”

Table C.1: summary of semi-structured literature searches

Search term	Results and issues
Wellbeing AND student AND New Zealand AND Finland AND policy AND data AND measure	Results- (11,200,000) First two results were OECD (assessment of Finish Education policy but no reference to wellbeing, comparative wellbeing study of OECD countries from 2009). Varied source types (OECD, New Zealand, Finland, and EU based research groups) Issue- Sources largely not recent with 2/3rds being from before 2015, 8/9 off topic to various degrees
Wellbeing AND student AND New Zealand AND Finland AND policy AND practice AND data AND measure (01/01/2015)	Issue- The choice of 2015 as a year seemed to arbitrary and it felt best to stick to more regular increments
Wellbeing AND student AND New Zealand AND Finland AND policy AND data AND measure (21/06/2017)	Results- (5,310,000) Very open. Interesting texts included The Wellbeing Budget from New Zealand, and a Comparative Study Report from Nuffield Trust. Diverse set of authors including academic, government (Canada, New Zealand), and consultancy (Deloitte) Issue- Out of 8/10 first page results were slightly off topic, focused either on mental health specifically, or not focused on school learners.
Wellbeing AND student AND New Zealand AND Finland AND policy AND practice AND data AND measure (21/06/2017)	Reasoning- Added the word "practice" to see if we got more results related to the implementation of policy requiring measuring wellbeing amongst students Results- (5,080,000) Getting more focused, keep getting the sources previously highlighted as relevant/interesting which is positive. Interesting blog by Deloitte on developing indicators for measuring wellbeing amongst students. Higher density of relevant sources.
Wellbeing AND student AND New Zealand AND policy AND practice AND data AND measure (21/06/2017)	Reasoning- Checking if we could get more focused results by dropping one of our two exemplar countries and perhaps run two separate searches. Results- Interesting relevant results like Study on the interpretation of wellbeing in NZ policy documents and a study assessing the wellbeing of Māori school students. Issue- 3/10 results were for higher education (PhDs and University).

The results of this structured search yielded useful but a limited number of sources that could provide a jumping off point. Using the insights provided by this initial structured search we then used a snowballing approach to gather further sources. This involved looking into the cited documents in the sources found through the structured search to assess their

utility in providing insights into international practice. The sources ultimately cited for this report can be found below.

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Annex D – Template for developing detailed recommendations

Summary of recommendation:	
Rationale:	
Level of prescription	<ul style="list-style-type: none"> [e.g. prescribed + moderated]
Guidance and support required	<ul style="list-style-type: none"> [what does the Welsh Government need to provide to help with administering, collecting data, using outputs]
How this meets needs	<ul style="list-style-type: none"> [summary by each stakeholder; any tensions of conflicts]
Summary of potential benefits	<ul style="list-style-type: none"> [summary by each stakeholder]
New burdens	<ul style="list-style-type: none"> [e.g. how much time for which kinds of organisation; one-off or ongoing]
Data journey –collection	<ul style="list-style-type: none"> [how data would be collected]
Data journey – processing, sharing, reporting	<ul style="list-style-type: none"> [how data would be stored / linked, how is it shared and with whom, what kind of indicators and reporting involved]
Data journey – indicators and publishing	<ul style="list-style-type: none"> [examples for the kinds of indicators and reporting that would be created and published]
Data journey – use	<ul style="list-style-type: none"> [how we anticipate that data would be used by different stakeholders; link to specific decision-making and activities]
Examples of similar practice internationally	<ul style="list-style-type: none"> [details of international practice and similarities with current practice in Wales and recommendation being made]

Data item	New data?	How this should be captured
<ul style="list-style-type: none"> [XXX] 	[Yes/No – what is collected currently and where; OR what exactly is not collected]	[how we propose data should be collected]
<ul style="list-style-type: none"> [XXX] 	[Yes/No – what is collected currently and where; OR what exactly is not collected]	[how we propose data should be collected]
<ul style="list-style-type: none"> [XXX] 	[Yes/No – what is collected currently and where; OR what exactly is not collected]	[how we propose data should be collected]

<i>Implications for different stakeholders</i>	Welsh Government	Estyn	RCs / LAs	Schools
Self-evaluation				
Accountability				
Transparency				
Considerations for other stakeholders				
<ul style="list-style-type: none"> [Stakeholder + consideration] 				

	Welsh Government	Estyn	RCs / LAs	Schools
Risk of <u>proposed change</u>				
Risk of <u>no change</u>				

Annex E – Areas where we have not made recommendations

1. Improving data quality for indicators of learner behaviour and attitude to learning

Problem	<ul style="list-style-type: none"> • Our research highlighted a lack of confidence in indicators for key aspects of learner behaviour and attitude to learning such as attendance, exclusions, and pupil movement • This arises from inconsistent practices when recording data items in management information systems and the PLASC (i.e., attendance), and different school practices relating to exclusions • This has potential impacts on the quality of indicators in national statistics and the information used by schools and middle tier organisations for accountability and improvement purposes relating to behaviour. There is a potentially significant risk to equity (e.g., underreporting of attendance or exclusions for some groups) • Since no issues were identified with the indicators themselves used to summarise data and report on attendance/exclusions etc., we concluded that this is predominantly a practice issue and outside the scope of this project
Possible response	<ul style="list-style-type: none"> • Welsh Gov could conduct a short research exercise to understand these issues in greater depth, covering for example: the ways in which schools might record attendance, exclusions, or pupil moves differently; the impact this has on data and indicators, and subsequently on the ability to accurately compare indicators between schools and conduct improvement and accountability functions • Following this exercise, it might be appropriate to update some data definitions for capturing attendance, exclusions, and pupil movement data within management information and statutory returns (i.e., PLASC), alongside additional guidance for both schools and middle tier organisations for how attendance/ exclusions etc. should be understood and recorded
Discussion: risks, options, other considerations	<ul style="list-style-type: none"> • There is some indication that some of the inconsistencies in recording learner attendance, exclusions, and pupil moves are in part driven by the same tensions between the functions of accountability and self-evaluation. This is discussed further below at recommendation XX

2. Learner voice in destinations data

Problem	<ul style="list-style-type: none"> • Currently, relating to destinations, schools tend to report on the proportion of their learners that go on to HE after school – and does not generally reflect learner opinions or reflections on where they ended up. • As such, a learner not going on to HE tends to be seen as a ‘unsuccessful’ outcome, when actually a learner not going on to HE may have been the most appropriate outcome, and one which the learner is happy with.
Possible response	<ul style="list-style-type: none"> • It could be valuable to develop a learner voice survey focused on understanding whether learners were happy with their post-school ‘destination’.

	<ul style="list-style-type: none"> • We would propose that this survey be run by the Welsh Government, and be anonymised at an individual level but contain details on the learner's school. • The survey could be shared with learners at structured time intervals after they finished school – for example, 2 months later, one year later, 5 years later. This would help to understand learner reflections in the short-, medium- and long-term.
<p>Discussion: risks, options, other considerations</p>	<ul style="list-style-type: none"> • Careful consideration should be given to determine how to incentivise learners to respond to the survey. Given that the survey would likely be optional, there may be an element of selection bias in responses, where only learners who feel very positively or negatively about their school respond, limiting the value of the data. • Beyond this, survey questions would need to be carefully designed to ensure that responses reflected learner experiences of their school – as opposed to other external factors that have impacted their 'destination' post-school.